UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
SITE	§	STUDY
San Antonio, Texas	§	
	§	
BAE Systems Resolution, Inc.,	§	
Bridgestone Americas Tire Operations,	§	
LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
Exxon Mobil Corporation, Flint Group	§	
Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
	§	
RESPONDENTS; and	§	
	§	
	§	
United States Defense Logistics Agency,	§	Proceeding Under Sections 104, 107, and
Defense Reutilization and	§	122 of the Comprehensive
Marketing Service,	§	Environmental Response, Compensation,
	§	and Liability Act, as amended, 42 U.S.C.
FEDERAL RESPONDENT	§	§§ 9604, 9607, and 9622

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FOR SETTLEMENT DISCUSSION PURPOSES ONLY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE San Antonio, Texas	§	
BAE Systems Resolution, Inc., Bridgestone Americas Tire Operations, LLC, Department of State Health Services, PerkinElmer Automotive Research, Inc., Exxon Mobil Corporation, Flint Group Incorporated, National Radiator Company, a dissolved Texas corporation, and Structural Metals, Inc., RESPONDENTS; and	§	U.S. EPA Docket No. 06-05-10
United States Defense Logistics Agency, Defense Reutilization and Marketing Service, FEDERAL RESPONDENT	§	Proceeding Under Sections 104, 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607, and 9622

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY

6RC-S;Chiang:R&HOilTropicana RIFS AOC.wd:12/21/-09

6SF-TE	6SF-TE	6SF-RA	6SF-RA	6SF-S
Shade	Johnson	Sanchez	Villarreal	Peycke
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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	§	
FEDERAL RESPONDENT	§	

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("EPA"), Respondents listed in Appendix A ("Respondents"), and the United States Defense Logistics Agency, Defense Reutilization and Marketing Service ("Federal Respondent"). The Settlement Agreement concerns the preparation and performance of a Remedial Investigation

and Feasibility Study ("RI/FS") at the R&H Oil/Tropicana Energy Site located at 403 and 507 (formerly 419 in proposed listing documentation) Somerset Road in San Antonio, Bexar County, Texas ("Site"), and reimbursement for Future Response Costs incurred by EPA in connection with the RI/FS.

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607, and 9622 ("CERCLA"). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (1987), and further delegated to Regional Administrators on May 11, 1994, by EPA Delegation No. 14-14-C. This authority has been redelegated by the Regional Administrator to the Director, Superfund Division, by EPA Regional Delegation No. R6-14-14-C (June 8, 2001).

3. In accordance with Sections 104(b)(2) and 122(j)(1) of CERCLA, 42 U.S.C. §§ 9604(b)(2) and 9622(j)(1), EPA notified the Federal and State natural resource trustees on July 7, 2009, of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal and state trusteeship.

4. The Parties recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondents and Federal Respondent in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondents and Federal Respondent do not admit, and retain the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of fact, conclusions of law and determinations in Sections V and VI of this Settlement Agreement. Respondents and Federal Respondent agree to comply with and be bound by the terms of this Settlement Agreement and further agree that they will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon EPA, Federal Respondent, any successor departments or agencies of the United States, Respondents, their heirs, successors and assigns. Any change in ownership or corporate status of a Respondent, including but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's responsibilities under this Settlement Agreement.

6. Respondents are jointly and severally liable for carrying out all activities required of Respondents by this Settlement Agreement. In the event of the insolvency or other failure of any one or more Respondents to implement the requirements required of Respondents under this Settlement Agreement, the remaining Respondents shall complete all such requirements.

7. Respondents shall ensure that their contractors, subcontractors, laboratories and consultants which are retained to conduct any work performed under this Settlement Agreement receive a copy of this Settlement Agreement and comply with this Settlement Agreement. Respondents shall be responsible for any noncompliance of Respondents, and Federal

Respondent shall be responsible for any noncompliance of Federal Respondent, with this Settlement Agreement.

8. Each undersigned representative of EPA and Respondents and Federal Respondent certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to execute and legally bind EPA or Respondents or Federal Respondent, as the case may be, to this Settlement Agreement.

III. STATEMENT OF PURPOSE

9. In entering into this Settlement Agreement, the objectives of the Parties are: (a) to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site, by conducting a Remedial Investigation as more specifically set forth in the Statement of Work ("SOW") attached as Appendix B to this Settlement Agreement; (b) to identify and evaluate remedial alternatives to prevent, mitigate, or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site, by conducting a Feasibility Study; (c) to recover Future Response Costs incurred by EPA with respect to this Settlement Agreement; and (d) to provide for payment by the United States, on behalf of the Federal Respondent, of claims relating to Respondents' Costs, including Future Response Costs and Respondents' Past Costs.

10. The Work conducted under this Settlement Agreement is subject to approval by EPA and shall provide all appropriate and necessary information to assess Site conditions and evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. Part 300. Respondents shall conduct all Work under this Settlement Agreement in compliance with CERCLA, the NCP, and all applicable EPA guidance documents, policies, and procedures.

IV. DEFINITIONS

11. Unless otherwise expressly provided herein, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, et seq.

b. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.

c. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXXI.

d. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

e. "Engineering Controls" shall mean constructed containment barriers or systems that control one or more of the following: (1) downward migration, infiltration or seepage of surface runoff or rain; or (2) natural leaching migration of contaminants through the subsurface over time. Examples include caps, engineered bottom barriers, immobilization processes, and vertical barriers.

f. "Federal Respondent" shall mean the United States Defense Logistics Agency, Defense Reutilization and Marketing Service, a primary level field activity of the United States Defense Logistics Agency, and any successor departments, agencies, or instrumentalities of the United States.

g. "Future Response Costs" shall mean all costs not inconsistent with the NCP including, but not limited to, direct and indirect costs, that the United States, but not Federal Respondent or the Department of Justice in representing Federal Respondent, incurs from the Effective Date of this Settlement Agreement until the issuance of the Record of Decision in reviewing or developing plans, reports, and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, Agency for Toxic Substances and Disease Registry ("ATSDR") costs, the costs incurred pursuant to Paragraph 52 (costs and attorneys fees including any costs or fees to secure access paid to non-liable property owners, including the amount of just compensation), Paragraph 38 (emergency response), and Paragraph 86 (Work takeover). "Future Response Costs" does not include any costs incurred by Federal Respondent or the Department of Justice in representing Federal Respondent. "Future Response Costs" shall not include costs incurred: (1) by the United States for any future Remedial Design/Remedial Action ("RD/RA") or any other remedial actions at or in connection with the Site or (2) directly by the State and billed directly, at or in connection with the Site.

h. "Hazardous Substance (s)" shall have the meaning in Section 101 (14) of CERCLA, 42 U.S.C. § 9601 (14).

i. "Institutional controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.

j. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

k. "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

l. "Paragraph" shall mean a portion of this Settlement Agreement identified at the beginning by an Arabic numeral.

m. "Parties" shall mean EPA, Respondents, and Federal Respondent.

n. "Pollutant" or "Contaminant" shall have the meaning in Section 101 (33) of CERCLA, 42 U.S.C. § 9601 (33).

o. "Respondents" shall mean those parties identified in Appendix A. If additional parties sign this Settlement Agreement, they shall become Respondents to this Settlement Agreement as of the date of their signing.

p. "Respondents' Costs" only as it relates to Respondents' Costs to be paid by Federal Respondent in accordance with this Settlement Agreement shall mean all costs incurred by Respondents in connection with or relating to the Work required by Section IX (Work to be Performed) of this Settlement Agreement and the attached Statement of Work, Future Response Costs paid by Respondents pursuant to Section XVIII (Payment of Future Response Costs) of this Settlement Agreement, and Respondents' Past Costs. "Respondents' Costs" shall not include costs incurred by the Respondents (1) for any future Remedial Design/Remedial Action (RD/RA) or any other remedial actions at or in connection with the Site or (2) to pay the State for any costs incurred at or in connection with the Site.

q. "Respondents' Past Costs" only as it relates to Respondents' Past Costs to be paid by Federal Respondent in accordance with this Settlement Agreement shall mean all costs incurred by Respondents with respect to the Site prior to the Effective Date of this Settlement Agreement.

r. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.

s. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent, the SOW, appendices attached hereto, and all documents incorporated by reference into this document including without limitation EPA-approved submissions. EPA-approved submissions (other than progress reports) are incorporated into and become a part of the Settlement Agreement upon approval by EPA. In the event of conflict between this Settlement Agreement and any appendix or other incorporated documents, this Settlement Agreement shall control.

t. "Site" shall mean the R & H Oil/Tropicana Energy Site, encompassing approximately six to seven acres, located at 403 and 507 (formerly 419 in proposed listing documentation) Somerset Road in San Antonio, Bexar County, Texas and approximately five miles southwest of downtown San Antonio. The Site is composed of two tracts: the northern

tract located at 403 Somerset Road and the southern tract located at 507 (formerly 419 in proposed listing documentation) Somerset Road. The legal description of the Site is as follows:

> 3.92 acres located at New City Block (NCB) 8727, Block 2, Lots 21, 22, 23, 24A, and Street Lot P-100, San Antonio, Texas and 2.30 acres located at Artesian Gardens Subdivision, New City Block (NCB) 8730, Block 4, Lots 16B, 16C, 16D, 17B, 18B, 19B, and P-100, San Antonio, Bexar County, Texas

The Site is depicted generally on the map attached as Appendix C.

u. "State" shall mean the State of Texas and any agencies or instrumentalities thereof.

v. "Statement of Work" or "SOW" shall mean the Statement of Work for development of a RI/FS for "the Site", as set forth in Appendix B to this Settlement Agreement. The Statement of Work is incorporated into this Settlement Agreement and is an enforceable part of this Settlement Agreement as are any modifications made thereto in accordance with this Settlement Agreement.

w. "United States" shall mean the United States of America, including all of its departments, agencies, and instrumentalities, which includes without limitation, EPA, the Federal Respondent, and any federal natural resources trustee.

x. "Waste Material" shall mean (i) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); and (ii) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33).

y. "Work" shall mean all activities Respondents are required to perform under this Settlement Agreement, except those required by Section XIV (Retention of Records).

V. FINDINGS OF FACT

12. The Site area totals approximately six to seven acres and is composed of two tracts: a northern tract located at 403 Somerset Road and a southern tract located at 507 (formerly 419 in proposed listing documentation) Somerset Road in San Antonio, Bexar County, Texas. The northern tract previously housed oil refineries and most recently a waste oil recycling facility. The southern tract previously housed oil refineries, a petroleum distribution facility, and most recently, fuel/gasoline blending operations. The waste oil recycling activities on the northern tract and the fuel/gasoline blending operations on the southern tract ceased in approximately the late 1980's or early 1990's. The Site is presently inactive. The Site is located approximately five miles southwest of downtown San Antonio. The Site is bordered by an auto service center to the north, the Union Pacific Railroad line, an auto repair and parts establishment, and Kelly Air Force Base to the west, residential, commercial, and industrial development to the south and east and Somerset Road to the east. The Site is located in a densely populated area of San Antonio with ten schools in a one-mile radius.

13. Hazardous substances found at the Site include benzene, chlorobenzene, ethylbenzene, tetrachloroethene, toluene, 2-methylnaphthalene, 2-methylphenol, m,p-methylphenol, naphthalene, methylene chloride, acetone, 2-butanone, arsenic, barium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, and zinc. In performing the removal activities, EPA removed, from the northern portion of the Site, 120 cubic yard of oily debris, thirty cubic yards of asbestos-containing material, 1,396 cubic yards of contaminated soils, 52,906 gallons of oil with a bottoms sediment and water content greater than 30%, and 26,701 gallons of wastewater. From the southern portion of the Site, EPA removed 96 cubic yards of contaminated soils, 1,626 gallons of Benzene-contaminated wastewater, and 4,715 gallons of wastewater.

14. Releases of hazardous substances include, but are not limited to, leakages from several of the former aboveground storage tanks and the former piping, and overflows from some of the former aboveground storage tanks into Site soils and groundwater.

15. As a result of the release or threatened release of hazardous substances, EPA has undertaken response actions at or in connection with the Site under Section 104 of CERCLA, 42 U.S.C. § 9604. On June 26, 2001, the EPA Region 6 Superfund Division Director signed the Action Memoranda finding that conditions at the Site constituted an imminent and substantial endangerment to the public health or welfare, or the environment.

16. In response to the release and/or threatened release of hazardous substances from the Site, EPA, in August 2001, commenced Superfund time-critical removal actions at the Site pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604. Removal actions on the northern portion of the Site included the removal of asbestos containing materials from on-site containers, equipment, piping, and within buildings; removal of contaminated materials from within on-site containers, equipment, and piping; removal (demolition) of on-site containers, equipment, piping and other contaminated items and removal of contaminated soils. Removal actions on the southern portion of the Site included the removal of contaminated materials from within on-site containers, equipment, and piping, including an underground storage tank; removal (demolition) of on-site containers, equipment, piping and other contaminated items; and removal of contaminated soils.

17. The Site has been proposed to the National Priorities List ("NPL").

18. a. Respondent BAE Systems Resolution, Inc. (f/k/a/ Santana Resolution Corporation; f/k/a/ Stewart & Stevenson, Inc.) is a corporation incorporated in the state of Texas.

b. Respondent Bridgestone Americas Tire Operations, LLC (f/k/a Bridgestone Firestone, Inc.) is a Delaware Limited Liability Company.

c. Respondent Department of State Health Services ("DSHS") on behalf of San Antonio State Chest Hospital n/k/a Texas Center for Infectious Disease is an agency of the State of Texas.

d. Respondent PerkinElmer Automotive Research, Inc. (f/k/a EG&G Automotive Research, Inc.) is a corporation incorporated in the state of Texas.

e. Respondent Exxon Mobil Corporation is a corporation incorporated in the state of New Jersey.

f. Respondent Flint Group Incorporated (f/k/a Flint Ink Corporation) is a corporation incorporated in the state of Michigan.

g. Respondent National Radiator Company (formerly doing business as National Lube N Zoom) is a dissolved Texas corporation.

h. Respondent Structural Metals, Inc. is a corporation incorporated in the state of Texas.

19. In March and April 2004, some of the Respondents voluntarily conducted a preliminary investigation at the Site to gain a better understanding of the current Site conditions. This investigation, the undertaking and scope of which were not approved by EPA in advance, involved collection of soil and groundwater samples. The data collected from this investigation have not been validated by or formally approved by EPA.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, EPA has determined that:

20. The R&H Oil/Tropicana Energy Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

21. The contamination found at the Site, as identified in the Findings of Fact above includes "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), or constitute "any pollutant or contaminant" that may present an imminent and substantial danger to public health or welfare under Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1).

22. The conditions described in Paragraph 14 of the Findings of Fact above constitute actual and/or threatened "releases" of hazardous substances from the facility as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

23. Respondents and Federal Respondent are "persons" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

24. Respondents and Federal Respondent are responsible parties under Sections 104, 107, and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607, and 9622. Each Respondent and Federal Respondent is a person who either generated the hazardous substances found at the Site, who owned or operated the Site at the time of disposal of any hazardous substances, or who arranged for disposal or transport for disposal of hazardous substances at the Site. Each Respondent and

Federal Respondent, therefore, are alleged by EPA to be liable under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

25. The actions required by this Settlement Agreement are necessary to protect the public health or welfare or the environment, are in the public interest, 42 U.S.C. § 9622, are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1) and 9622, and will expedite effective remedial action and minimize litigation.

26. The EPA has determined that Respondents are qualified to conduct the RI/FS within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the Work properly, promptly and consistent with CERCLA and the NCP, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondents comply with the terms of this Settlement Agreement.

VII. SETTLEMENT AGREEMENT AND ORDER

27. Based upon the foregoing Findings of Fact and Conclusions of Law and Determinations, it is hereby Ordered and Agreed that Respondents and Federal Respondent shall comply with all provisions of this Settlement Agreement, including, but not limited to, all appendices to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VIII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS

28. Selection of Contractors, Personnel. All Work performed under this Settlement Agreement shall be under the direction and supervision of qualified personnel. Within thirty (30) days of the Effective Date of this Settlement Agreement, and before the Work outlined below begins, Respondents shall notify EPA in writing of the names, titles, and qualifications of the lead/supervisory personnel for the contractors, subcontractors, consultants and laboratories that have already been selected by Respondents to be used in carrying out such Work. Respondents shall notify EPA in writing of, and provide the names, titles, and qualifications for, any additional lead/supervisory personnel of contractors that are subsequently selected by Respondents to carry out the Work within thirty (30) days after selection by Respondents. With respect to any proposed contractor to be used in carrying out the Work, Respondents shall demonstrate that the proposed contractor has a quality system which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995, or most recent version), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001 or subsequently issued guidance) or equivalent documentation as determined by EPA. Subcontractors may work under the primary contractor's QMP and are not required to submit their own individual QMP to EPA. The qualifications of the contractors and subcontractors undertaking the Work for Respondents shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. This Settlement Agreement is contingent on Respondents' demonstration to EPA's satisfaction that Respondents are qualified to perform properly and promptly the actions set forth in this Settlement Agreement. If EPA disapproves in

writing of any person's technical qualifications, Respondents shall notify EPA of the identity and qualifications of the replacements within thirty (30) days of the written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Settlement Agreement and to conduct a complete RI/FS, and to seek reimbursement for costs and penalties from Respondents. During the course of the RI/FS, Respondents shall notify EPA in writing of any changes or additions in the lead/supervisory personnel used to carry out such Work, providing their names, titles, and qualifications. The EPA shall have the same right to disapprove changes and additions to the lead/supervisory personnel as it has hereunder regarding the initial notification.

29. Respondents designate Eric Pastor of Pastor, Behling & Wheeler, LLC as their Project Coordinator who shall be responsible for administration of all actions by Respondents required by this Settlement Agreement. To the greatest extent possible, the Project Coordinator shall be present on the Site or readily available during Site Work. The EPA hereby approves the designated Project Coordinator, but retains the right to disapprove of the designated Project Coordinator in the future. If EPA disapproves of the designated Project Coordinator, Respondents shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number and qualifications within ten (10) days following EPA's disapproval. Respondents shall have the right to change their Project Coordinator, subject to EPA's right to disapprove. Respondents shall notify EPA ten (10) days before such a change is made. The initial notification may be made orally but shall be promptly followed by a written notification. Receipt by Respondents' Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by Respondents.

30. The EPA has designated Chris Villarreal of the Region 6 Remedial Branch Arkansas/Texas Team as its Remedial Project Manager. The EPA will notify Respondents of a change of its designated Project Coordinator. Except as otherwise provided in this Settlement Agreement, Respondents shall direct all submissions required by this Settlement Agreement to the Project Coordinator at:

Chris Villarreal
Remedial Project Manager, 6SF-RA
U.S. Environmental Protection Agency Region 6
1445 Ross Avenue
Dallas, Texas 75202
(214) 665-6758
villarreal.chris@epa.gov

31. The EPA's Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager ("RPM") and On-Scene Coordinator ("OSC") by the NCP. In addition, EPA's Project Coordinator shall have the authority consistent with the NCP, to halt any Work required by this Settlement Agreement, and to take any necessary response action when s/he determines that conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The absence of the EPA Project Coordinator from the area under study pursuant to this Settlement Agreement shall not be cause for the stoppage or delay of Work.

32. The EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FS, as required by Section 104(a) of CERCLA, 42 U.S.C. § 9604(a). Such person shall have the authority to observe Work and make inquiries in the absence of EPA but not to modify the RI/FS Work Plan.

IX. WORK TO BE PERFORMED

33. The Work to be performed under this Settlement Agreement is only for the RI/FS at the Site. Respondents shall conduct the RI/FS in accordance with the provisions of this Settlement Agreement, the SOW, CERCLA, the NCP, and applicable EPA guidance, including, but not limited to, the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01, October 1988 or subsequently issued guidance), "Guidance for Data Useability in Risk Assessment" (OSWER Directive #9285.7-05, October 1990 or subsequently issued guidance), and applicable guidance referenced therein, and applicable guidances referenced in the SOW, as may be amended or modified by EPA. The RI shall consist of collecting data to characterize Site conditions, determining the nature and extent of the contamination at or from the Site, assessing risk to human health and the environment and conducting treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies that are being considered. A preliminary Technical Scope of Work for the Site investigation is attached as Appendix D to the SOW. The FS shall determine and evaluate (based on treatability testing, where appropriate), alternatives for response action to prevent, mitigate or otherwise respond to or remedy the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site. The alternatives evaluated must include, but shall not be limited to, the range of alternatives described in the NCP, and shall include remedial actions that utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In evaluating the alternatives, Respondents shall address the factors required to be taken into account by Section 121 of CERCLA, 42 U.S.C. § 9621, and Section 300.430(e) of the NCP, 40 C.F.R. § 300.430(e). Upon request by EPA, Respondents shall submit in electronic form all portions of any plan, report or other deliverable Respondents are required to submit pursuant to provisions of this Settlement Agreement.

34. Modification of the RI/FS Work Plan.

a. If at any time during the RI/FS process, Respondents identify a need for additional data, Respondents shall submit a memorandum documenting the need for additional data to the EPA Project Coordinator within thirty (30) days of identification. The EPA in its discretion, after discussion with Respondents' Project Coordinator, will determine whether the additional data will be collected by Respondents and whether it will be incorporated into plans, reports, and other deliverables.

b. In the event of unanticipated or changed circumstances at the Site, Respondents shall notify the EPA Project Coordinator by telephone within twenty-four (24) hours of discovery of the unanticipated or changed circumstances. In the event that EPA determines that the immediate threat or the unanticipated or changed circumstances warrant changes in the RI/FS Work Plan, EPA shall, after discussion with Respondents' Project Coordinator, modify or amend

the RI/FS Work Plan in writing accordingly. Respondents shall perform the RI/FS Work Plan as modified or amended.

c. The EPA may determine that, in addition to tasks defined in the initially approved RI/FS Work Plan, other additional Work is necessary to accomplish the objectives of the RI/FS. Respondents agree to perform these response actions in addition to those required by the initially approved RI/FS Work Plan, including any approved modifications, if EPA determines that such actions are necessary for a complete RI/FS.

d. Respondents shall confirm or deny their willingness to perform the additional Work in writing to EPA within thirty (30) days of receipt of the EPA request. If Respondents object to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondents may seek dispute resolution pursuant to Section XV (Dispute Resolution). The SOW and/or RI/FS Work Plan shall be modified in accordance with the final resolution of the dispute.

e. Respondents shall complete the additional Work agreed to or in accordance with the dispute final resolution according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the RI/FS Work Plan or written RI/FS Work Plan supplement. The EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondents, and/or to seek any other appropriate relief.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.

35. Off-Site Shipment of Waste Material.

a. Respondents shall, prior to any off-site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to EPA's Designated Project Coordinator. However, this notification requirement shall not apply to any off-site shipments when the total volume of all such shipments will not exceed ten (10) cubic yards.

b. Respondents shall include in the written notification the following information: (i) the name and location of the facility to which the Waste Material is to be shipped; (ii) the type and quantity of the Waste Material to be shipped; (iii) the expected schedule for the shipment of the Waste Material; and (iv) the method of transportation. Respondents shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

c. The identity of the receiving facility and state will be determined by Respondents following the award of the contract for the remedial investigation and feasibility study. Respondents shall provide the information required by Paragraphs 35(a) and 35(b) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

d. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an offsite location, Respondents shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents shall only send hazardous substances, pollutants, or contaminants from the Site to an offsite facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

36. Meetings. Upon fourteen (14) days prior written notice from EPA, Respondents shall make presentations at and participate in meetings at the request of EPA during the initiation, conduct, and completion of the RI/FS. In addition to discussion of the technical aspects of the RI/FS, topics will include, but are not limited to, anticipated problems or new issues. Meetings will be scheduled at EPA's discretion or upon request of Respondents.

37. Bi-Monthly Progress Reports. In addition to the plans, reports and other deliverables set forth in this Settlement Agreement, Respondents shall provide to EPA the first Bi-Monthly Progress Reports as specified in the Final RI/FS Work Plan. Thereafter, the Bi-Monthly Progress Reports shall be due by the tenth (10th) day of every other following month. The Bi-Monthly Progress Reports can be submitted electronically. At a minimum, these progress reports shall (a) describe the actions which have been taken to comply with this Settlement Agreement during the preceding two-month period, (b) include all quality-assured results of sampling and tests and all other quality-assured data received by Respondents for that reporting period; (c) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FS completion; and (d) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays. The EPA may modify this provision to require monthly progress reports if necessary based on the scope or pace of the Work.

38. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action. Respondents shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondents shall also immediately notify first the Regional Phone Duty Officer at the EPA Region 6 Spill Hotline Number, 866-372-7745, and then the EPA Project Coordinator or, in the event of his/her unavailability, the On-Scene Coordinator ("OSC") of the incident or Site conditions. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondents shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVIII (Payment of Future Response Costs).

b. In addition, in the event of any release of a hazardous substance from the Site which, pursuant to Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), requires reporting to the

National Response Center, Respondents shall immediately notify first the National Response Center at (800) 424-8802 and then the EPA Project Coordinator. Respondents shall submit a written report to EPA within seven (7) days after each such release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. §§ 11004, *et seq.*

X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

39. After review of any plan, report, or other item that is required to be submitted for approval pursuant to this Settlement Agreement, in a notice to Respondents EPA shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission and direct that Respondents modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondents at least one notice of deficiency and an opportunity to cure within thirty (30) days after completing discussions of the EPA's comments on the submission (and in no event later than sixty (60) calendar days after receipt of EPA's comments on the submission), except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

40. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 39(a), (b), (c), or (e), Respondents shall proceed to take any action required by the plan, report or other deliverable, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XV (Dispute Resolution) with respect to the modifications or conditions made by EPA. Following EPA approval or modification of a submission or portion thereof, Respondents shall not thereafter alter or amend such submission or portion thereof unless directed by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to 39(c) and the submission had a material defect, EPA retains the right to seek stipulated penalties, as provided in Section XVI (Stipulated Penalties).

41. Resubmission.

a. Upon receipt of a notice of disapproval, Respondents shall within thirty (30) days after completing discussions with EPA regarding its notice of disapproval (and in no event later than sixty (60) calendar days after receipt of EPA's notice of disapproval) correct the deficiencies and resubmit the plan, report, or other deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XVI, shall accrue during the thirty-(30) day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 42 and 43.

b. Notwithstanding the receipt of a notice of disapproval, Respondents shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise

directed by EPA. Implementation of any non-deficient portion of a submission shall not relieve Respondents of any liability for stipulated penalties under Section XVI (Stipulated Penalties).

c. Respondents shall not proceed further with any subsequent activities or tasks until receipt of EPA approval, approval on condition, or modification for the following deliverables: (i) RI/FS Work Plan, RI/FS Sampling and Analysis Plan, and RI/FS Health and Safety Plan; (ii) Draft Remedial Investigation Report; (iii) if EPA, after discussion with the Respondents not lasting longer than thirty (30) calendar days, determines that treatability studies are required, Draft Treatability Study Work Plan including a sampling and analysis plan and a health and safety plan; and (iv) Draft Feasibility Study Report. While awaiting EPA approval, approval on condition, or modification of these deliverables, Respondents shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth in this Settlement Agreement and the SOW.

d. For all remaining deliverables not listed above in Paragraph 41(c), Respondents shall proceed with all subsequent tasks, activities, and deliverables without awaiting EPA approval on the submitted deliverable. The EPA reserves the right to stop Respondents from proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the RI/FS.

42. If EPA disapproves a resubmitted plan, report, other deliverable, or portion thereof, EPA may again direct Respondents to correct the deficiencies. The EPA shall also retain the right to modify or develop the plan, report, or other deliverable. Respondents shall implement any such plan, report, or deliverable as corrected, modified, or developed by EPA, subject only to Respondents' right to invoke the procedures set forth in Section XV (Dispute Resolution).

43. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondents shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately unless Respondents invoke the dispute resolution procedures in accordance with Section XV (Dispute Resolution), and EPA's action is revoked or substantially modified pursuant to a Dispute Resolution decision issued by EPA or superceded by an agreement reached pursuant to that Section. The provisions of Section XV (Dispute Resolution) and Section XVI (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is not otherwise revoked, substantially modified, or superceded as a result of a decision or agreement reached pursuant to the Dispute Resolution process set forth in Section XV, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XVI.

44. In the event that EPA takes over some of the tasks, but not the preparation of the RI Report or the FS Report, Respondents shall incorporate and integrate information supplied by EPA into the final reports.

45. All plans, reports, and other deliverables submitted to EPA under this Settlement Agreement shall, upon approval or modification by EPA, be incorporated into and enforceable under this Settlement Agreement. In the event EPA approves or modifies a portion of a plan,

report, or other deliverable submitted to EPA under this Settlement Agreement, the approved or modified portion shall be incorporated into and be enforceable under this Settlement Agreement.

46. Neither failure of EPA to expressly approve or disapprove of Respondents' submissions within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Whether or not EPA gives express approval for Respondents' deliverables, Respondents are responsible for preparing deliverables of acceptable quality to EPA.

XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION

47. Quality Assurance. Respondents shall assure that Work performed, samples taken and analyses conducted conform to the requirements of the SOW, the quality assurance project plan ("QAPP") as described in the SOW, and applicable guidance documents identified therein. Respondents will assure that field personnel used by Respondents are properly trained in the use of field equipment and in chain of custody procedures. Respondents shall only use laboratories which have a documented quality system that complies with "EPA Requirements for Quality Management Plans (QA/R-2)", EPA/240/B-01/002, March 2001, or equivalent documentation as determined by EPA.

48. Sampling.

a. All quality-assured results of sampling, tests, modeling or other quality-assured data generated by Respondents, or on Respondents' behalf, during the period that this Settlement Agreement is effective, shall be submitted to EPA in the next bi-monthly progress report as described in Paragraph 37 of this Settlement Agreement. The EPA will make available to Respondents validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.

b. Respondents shall verbally notify EPA at least fifteen (15) days prior to conducting significant field events as described in the SOW, RI/FS Work Plan, or Sampling and Analysis Plan. Respondents shall not proceed with field activities without prior EPA approval. At EPA's verbal or written request or at the request of EPA's oversight assistant, Respondents shall allow split or duplicate samples to be taken by EPA (and its authorized representatives) of any samples collected in implementing this Settlement Agreement. All split samples of Respondents shall be analyzed by the methods identified in the QAPP.

49. Access to Information.

a. Respondents shall provide to EPA, upon request, copies of all documents and information, except those that qualify for exclusion in Paragraph 49(c), within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, and other documents or information related to the Work. For purposes of investigation, information gathering, or testimony, Respondents shall also make available to EPA their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

b. Respondents may assert business confidentiality claims covering part or all of the documents or information submitted to EPA under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when it is submitted to EPA, or if EPA has notified Respondents that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondents. Respondents shall segregate and clearly identify all documents or information submitted under this Settlement Agreement for which Respondents assert business confidentiality claims.

c. Respondents may assert that certain documents, records and other information are privileged under the attorney-client privilege, attorney work product doctrine or any other privilege recognized by federal law. If the Respondents assert such a privilege or doctrine in lieu of providing documents, they shall provide EPA with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege or doctrine asserted by Respondents. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

d. No claim of confidentiality shall be made with respect to any data, including but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

50. In entering into this Settlement Agreement, Respondents waive any objections to any data gathered, generated, or evaluated by EPA, the State, or Respondents in the performance or oversight of the Work that has been collected and validated according to the quality assurances/quality control ("QA/QC") procedures required by the Settlement Agreement and EPA-approved RI/FS Work Plans and Sampling and Analysis Plans. If Respondents object to any other data relating to the RI/FS conducted under this Settlement Agreement, Respondents shall submit to EPA a report that specifically identifies and explains their objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within thirty (30) days of the bi-monthly progress report containing the data or within forty-five (45) days of Respondents' receipt of any other data.

XII. SITE ACCESS AND INSTITUTIONAL CONTROLS

51. If the Site or any other property where access is needed to implement this Settlement Agreement is owned or controlled by any of Respondents, such Respondents shall, commencing on the Effective Date, provide EPA and all of the non-owner Respondents and their applicable representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

52. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondents, Respondents shall use their best efforts to obtain all necessary access agreements within forty-five (45) days after the Scoping Phase Meeting, or as otherwise specified in writing by the EPA Project Coordinator. Respondents shall immediately notify EPA if, after using their best efforts, they are unable to obtain such agreements. For the purposes of this Paragraph and Paragraph 73 (Force Majeure), "best efforts" means the reasonable efforts that a prudent person would use in similar circumstances so as to accomplish the goal in a timely manner. "Best efforts" include the payment of reasonable sums of money in consideration of access. However, no payment of any sums shall be required if the property owner is also a potentially responsible party at the Site (or that party's successor-in-interest), including, but not limited to, Partners Terminal Co. Inc., Tropicana Energy Co., or their successors-in-interest. "Best efforts" do not require the Respondents to undertake legislative actions, eminent domain, or other legal proceedings available to the State of Texas to acquire access. Respondents shall describe in writing their efforts to obtain access. If Respondents cannot obtain access agreements, EPA may either: (i) obtain access for Respondents or assist Respondents in gaining access to the extent necessary to effectuate the response actions described herein by using such means as EPA deems appropriate (ii) perform those tasks or activities with EPA contractors or (iii) terminate the Settlement Agreement. Respondents shall reimburse EPA for all costs and attorney's fees incurred by the United States (but not Federal Respondent or the Department of Justice in representing Federal Respondent) in obtaining such access in accordance with the procedures in Section XVIII (Payment of Future Response Costs). If EPA performs those tasks or activities with EPA contractors and does not terminate the Settlement Agreement, Respondents shall perform all other tasks or activities not requiring access to that property and shall reimburse EPA for all costs incurred in performing such tasks or activities. Respondents shall integrate the results of any such tasks or activities undertaken by EPA into its plans, reports, and other deliverables.

53. Notwithstanding any provision of this Settlement Agreement, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA and any other applicable statutes or regulations.

XIII. COMPLIANCE WITH OTHER LAWS

54. Respondents shall comply with all applicable local, state, and federal laws and regulations when performing the RI/FS. No local, state, or federal permit shall be required for any portion of any action conducted entirely on-site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-site and requires a federal or state permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Settlement Agreement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XIV. RETENTION OF RECORDS

55. During the pendency of this Settlement Agreement and for a minimum of ten (10) years after commencement of construction of any remedial action, each Respondent or its

technical consultant shall preserve and retain all non-identical copies of documents, records, and other information (including documents, records, or other information in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary.

56. At the conclusion of this document retention period, Respondents or their technical consultant shall notify EPA at least ninety (90) days prior to the destruction of any such documents, records, or other information, and, upon request by EPA, Respondents shall deliver any such documents, records, or other information to EPA. Respondents may assert that certain documents, records, and other information are privileged under the attorney-client privilege, attorney work product doctrine or any other privilege recognized by federal law. If Respondents assert such a privilege or doctrine, they shall provide EPA with the following: (a) the title of the document, record, or other information; (b) the date of the document, record, or other information; (c) the name and title of the author of the document, record, or other information; (d) the name and title of each addressee and recipient; (e) a description of the subject of the document, record, or other information; and (f) the privilege or doctrine asserted by Respondent. However, no documents, records or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

57. Each Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927 regarding the Site.

58. The Federal Respondent acknowledges that it: (a) is subject to all applicable federal record retention laws, regulations, and policies; and (b) has certified that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e) and Section 3007 of RCRA, 42 U.S.C. § 6927 regarding the Site.

XV. DISPUTE RESOLUTION

59. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

60. If Respondents object to any EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, they shall notify EPA in writing of their objections within fifteen (15) days of such action, except as provided in Paragraph 78 where Respondents have within forty-five (45) days of receipt of EPA's bill for Future Response Costs to notify EPA of their objections to payment, unless the objections have been resolved

informally. The Parties shall have forty-five (45) days from EPA's receipt of Respondents' written objections to resolve the dispute (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted verbally but must be confirmed in writing.

61. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, the Parties shall be afforded the opportunity within fifteen (15) days after the end of the Negotiation Period to present their respective positions in writing and through oral presentation to the EPA's Associate Director, Remedial Branch, who will issue a written decision. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Respondents' obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs, and regardless of whether Respondents agree with the decision.

XVI. STIPULATED PENALTIES

62. Respondents shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 63 and 64 for failure to comply with any of the requirements of this Settlement Agreement specified below unless excused under Section XVII (Force Majeure). "Compliance" by Respondents shall include completion of the Work under this Settlement Agreement or any activities contemplated under any RI/FS Work Plan or other plan approved under this Settlement Agreement identified below, in accordance with all applicable requirements of law, this Settlement Agreement, the SOW, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

63. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per day for any non-compliance identified in Paragraph 63(b):

Penalty Per Violation Per Day	Period of Noncompliance
$500.00	1st through 14th day
$1,000.00	15th through 30th day
$5,000.00	31st day and beyond

b. Compliance Milestones:

i. RI/FS Work Plan
ii. RI/FS Site Health and Safety Plan
iii. Baseline Human Health Risk Assessment Report
iv. Screening Level Ecological Risk Assessment Report
v. Treatability Study Report, if treatability studies are performed

vi. Remedial Investigation Report
vii. Feasibility Study Report

64. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports pursuant to Paragraph 37:

Penalty Per Violation Per Day	Period of Noncompliance
$100.00	1st through 14th day
$500.00	15th through 30th day
$1,500.00	31st day and beyond

65. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 86, Respondents shall be liable for a stipulated penalty in the amount of $10,000 per day after the Work takeover. This penalty is in lieu of other specific stipulated penalties for deliverables comprising that portion of the Work assumed by EPA.

66. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under Section X (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondents of any deficiency; and (b) with respect to a decision by the EPA Associate Director designated in Paragraph 61 of Section XV (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that such EPA Associate Director issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

67. Following EPA's determination that Respondents have failed to comply with a requirement of this Settlement Agreement and EPA's determination that it will seek stipulated penalties, EPA shall give Respondents written notification of the same and describe the noncompliance. The EPA shall send Respondents a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondents of a violation.

68. All penalties accruing under this Section shall be due and payable to EPA within thirty (30) days of Respondents' receipt from EPA of a demand for payment of the penalties, unless Respondents invoke the dispute resolution procedures in accordance with Section XV (Dispute Resolution). All payments to EPA under this Section shall be paid by Electronic Funds Transfer ("EFT") instructions in Paragraph 76 (a) or by certified or cashier's check(s) made payable to "EPA Hazardous Substances Superfund," shall be mailed to:

U.S. Environmental Protection Agency
Superfund Payments
Cincinnati Finance Center
PO Box 979077

St. Louis, MO 63197-9000

All payments shall indicate that the payment is for stipulated penalties, and shall reference the EPA Region and Site/Spill ID Number 06MB, the EPA Docket Number 06-05-10, and the name and address of the party(ies) making payment. Copies of check(s) paid or documentation of EFTs pursuant to this Section, and any accompanying transmittal letter(s) shall be sent to:

Section Chief, Enforcement Assessment Section (6SF-TE)
U.S. Environmental Protection Agency Region 6
1445 Ross Ave.
Dallas, Texas 75202.

69. The payment of penalties shall not alter in any way Respondents' obligation to complete performance of the Work required under this Settlement Agreement.

70. Penalties shall continue to accrue as provided in Paragraph 66 during any dispute resolution period but need not be paid until thirty (30) days after Respondents' receipt of EPA's demand for payment of penalties issued after the dispute is resolved by agreement or by receipt of EPA's decision in favor of EPA.

71. If Respondents fail to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondents shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 67.

72. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondents' violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of willful violation of this Settlement Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XXI (Reservation of Rights by EPA). Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XVII. FORCE MAJEURE

73. Respondents agree to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a force majeure. For purposes of this Settlement Agreement, force majeure is defined as any event arising from causes beyond the control of Respondents or of any entity controlled by Respondents, including but not limited to their contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondents' best efforts to fulfill the obligation. Force majeure does not include financial

inability to complete the Work, increased cost of performance, or difficulties in obtaining access to the site property.

74. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a force majeure event, Respondents shall notify EPA orally within forty-eight (48) hours of when Respondents first knew that the event might cause a delay. Within ten (10) days thereafter, Respondents shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondents' rationale for attributing such delay to a force majeure event if they intend to assert such a claim; and a statement as to whether, in the opinion of Respondents, such event may cause or contribute to an endangerment to public health or welfare or the environment. Failure to comply with the above requirements shall preclude Respondents from asserting any claim of force majeure for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

75. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Settlement Agreement that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify Respondents in writing of its decision. If EPA agrees that the delay is attributable to a force majeure event, EPA will notify Respondents in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

XVIII. PAYMENT OF FUTURE RESPONSE COSTS

76. Payments of Future Response Costs.

a. Respondents shall pay EPA all Future Response Costs not inconsistent with the NCP. On an annual basis, EPA will send Respondents a bill requiring payment of the annual Future Response Costs expended at the Site. The annual billing will also include a SCORPIOS Report that describes the direct and indirect costs incurred by EPA and its contractors and reports from other agencies summarizing the Future Response Costs incurred. As set out in the definition section, "Future Response Costs" do not include any costs incurred by Federal Respondent or the Department of Justice in representing Federal Respondent. Respondents shall make all payments within sixty (60) days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 78 of this Settlement Agreement. Respondents shall make payments required by this Paragraph by Electronic Funds Transfer instructions below:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
Swift Address = FRNYUS 33

33 Liberty Street
New York, NY 10045
Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

and shall be accompanied by a statement identifying the name and address of the party(ies) making the payment, the Site name, the EPA Region and Site/Spill ID Number 06MB, the R&H Oil/Tropicana Energy Site Special Account, and the EPA docket number 06-05-10 for this action.

b. At the time of payment, Respondents shall send notice that payment has been made to:

Section Chief, Enforcement Assessment Section (6SF-TE)
U.S. Environmental Protection Agency Region 6
1445 Ross Avenue
Dallas, TX 75202

c. The amount to be paid by Respondents pursuant to Paragraph 76(a) shall be deposited into the R&H Oil/Tropicana Energy Site Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or once all response actions at or in connection with the Site are completed, to be transferred by EPA to the EPA Hazardous Substance Superfund. In addition, EPA entered into settlements with some de minimis parties at the Site. The future costs component of the funds collected from the settlements have been deposited into the R&H Oil/Tropicana Energy Site Special Account. During RD/RA negotiations, EPA will discuss the possibility of making the funds available to Respondents for conducting the remedy.

d. The Parties recognize that the payment obligations of Respondent Department of State Health Services on behalf of San Antonio State Chest Hospital n/k/a Texas Center for Infectious Disease under this Settlement Agreement can only be paid from appropriated funds legally available for such purpose. Nothing in this Settlement Agreement shall be interpreted or construed as a commitment or requirement that Department of State Health Services on behalf of San Antonio State Chest Hospital n/k/a Texas Center for Infectious Disease obligate or pay funds in contravention of the Texas Constitution, Art. III, §§ 49, 49a, 50, or 51.

77. If Respondents do not pay Future Response Costs within sixty (60) days of Respondents' receipt of a bill, Respondents shall pay Interest on the unpaid balance of Future Response Costs. The Interest on unpaid Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. If EPA receives a partial payment, Interest shall accrue on any unpaid balance. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondents' failure to make timely payments under this Section, including but not limited to, payments of stipulated penalties pursuant to Section XVI. Respondents shall make all payments required by this Paragraph in the manner described in Paragraph 76.

78. Respondents may contest payment of any Future Response Costs under Paragraph 76 if they determine that EPA has made an accounting error or if they believe EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP or outside the definition of Future Response Costs. Such objection shall be made in writing within forty-five (45) days of receipt of the bill and must be sent to the Enforcement Assessment Section Chief. Any such objection shall specifically identify the contested Future Response Costs and the basis for the objection. In the event of an objection, within sixty (60) days of Respondents' receipt of the bill from EPA, Respondents shall: (1) pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 76 and (2) establish an interest-bearing escrow account in a federally-insured bank and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondents shall send to the Enforcement Assessment Section Chief a copy of the statement and documentation evidencing payment of the uncontested Future Response Costs and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. The Respondents' written objection to payment made within forty-five (45) days of receipt of EPA's bill shall initiate the Dispute Resolution procedures in Section XV (Dispute Resolution). If EPA prevails in the dispute, within fourteen (14) days of the resolution of the dispute, Respondents shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 76. If Respondents prevail concerning any aspect of the contested costs, Respondents shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to EPA in the manner described in Paragraph 76. Respondents shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondents' obligation to reimburse EPA for its Future Response Costs.

XIX. PAYMENTS TO RESPONDENTS ON BEHALF OF FEDERAL RESPONDENT

79. As soon as reasonably practical after the Effective Date, but no later than one hundred twenty (120) days after the Effective Date, the United States, on behalf of the Federal Respondent, shall cause to be paid to Respondents $950,000 by electronic funds transfer pursuant to instructions to be provided by Respondents. If the payment is not made within ninety (90) days of the Effective Date, Interest on the unpaid balances shall be paid at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a), commencing on the 91st day after the Effective Date of this Settlement Agreement and accruing through the date of the payment. In any event, if full payment is not made within 120 days after the Effective Date of this Settlement Agreement, Respondents and Federal Respondent agree to resolve the issue of payment within thirty (30) days.

80. The Parties to this Settlement Agreement recognize and acknowledge that the payment obligation of the Federal Respondent under this Settlement Agreement can only be paid from appropriated funds legally available for such purpose. Nothing in this Settlement Agreement shall be interpreted or construed as a commitment or requirement that the Federal Respondent obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. §1341, or any other applicable provision of law.

81. Except with respect to Federal Respondent's payment of Respondents' Costs, payments made and Work performed under this Settlement Agreement by the Respondents or the Federal Respondent are not intended to establish a final allocation of liability or costs between or among the Respondents and/or the Federal Respondent and/or any non-participating potentially responsible party regarding the Site and shall not be used as precedent or evidence as to what an appropriate final allocation of liability at the Site should be. This Settlement Agreement does establish a final allocation of Respondents' Costs between the Respondents and Federal Respondent but shall not be used as precedent or evidence as to what an appropriate final allocation of liability at the Site should be. Federal Respondent acknowledges and agrees that if additional parties join the R&H Oil Company Site Group, this action will have no effect on the United States' payment obligation, on behalf of Federal Respondent, pursuant to this Section. Federal Respondent further acknowledges and agrees that no part of the payment provided for in this Section shall be refunded by Respondents, credited to, or in any way reduce any liability of Federal Respondent for any Remedial Design/Remedial Action ("RD/RA") and/or any other remedial actions related to the Site or any other claims reserved by Respondents in Section XXIII (Reservation Of Rights By Respondents). If the payment made on behalf of Federal Respondent pursuant to this Section exceeds Federal Respondent's final allocated share of liability or costs in connection with the Site, Federal Respondent agrees that Respondents do not have to refund any part of the payment made on behalf of Federal Respondent pursuant to this Section.

XX. COVENANT NOT TO SUE OR TAKE ADMINISTRATIVE ACTION BY EPA

82. In consideration of the actions that will be performed and the payments that will be made by Respondents under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, the EPA covenants not to sue or to take administrative action against any of the Respondents pursuant to Sections 106 or 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work performed under this Settlement Agreement and for recovery of Future Response Costs. This covenant not to sue shall take effect upon the Effective Date of this Settlement Agreement. With respect to each of the Respondents, individually, this covenant is conditioned upon the complete and satisfactory performance by each of the Respondents of its obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XVIII. This covenant not to sue extends only to Respondents and does not extend to any other person.

83. In consideration of the payment that will be made on behalf of the Federal Respondent under the terms of the Settlement Agreement, EPA covenants not to take administrative action against the Federal Respondent pursuant to Section 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work performed under this Settlement Agreement and for the recovery of Future Response Costs. This covenant is conditioned on the satisfaction of Federal Respondent's payment obligations pursuant to Section XIX of this Settlement Agreement. This covenant extends only to the Federal Respondent and does not extend to any other person.

XXI. RESERVATIONS OF RIGHTS BY EPA

84. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health or welfare or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA (1) from seeking legal or equitable relief to enforce the terms of this Settlement Agreement; (2) subject to the covenants not to sue in Paragraphs 82 and 83, from taking other legal or equitable action as it deems appropriate and necessary, or (3) subject to the covenants not to sue in Paragraphs 82 and 83, from requiring Respondents and Federal Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

85. The covenants not to sue set forth in Section XX above do not pertain to any matters other than those expressly identified therein. The EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondents and Federal Respondent with respect to all other matters, including, but not limited to:

a. claims based on a failure by Respondents or Federal Respondent to meet a requirement of this Settlement Agreement;

b. liability for costs not included within the definition of Future Response Costs;

c. liability for performance of response action other than the Work;

d. criminal liability;

e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and

g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.

86. Work Takeover. In the event EPA determines that Respondents have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondents may invoke the procedures set forth in Section XV (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondents shall pay pursuant to Section XVIII (Payment of Future Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXII. COVENANTS NOT TO SUE BY RESPONDENTS AND FEDERAL RESPONDENT

87. Except as provided in the reservations in Section XXIII, Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States or its contractors or employees, with respect to the Work, Future Response Costs, Respondents' Costs or this Settlement Agreement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of the Work or arising out of the response actions for which the Future Response Costs have or will be incurred, including any claim under the United States Constitution, the State of Texas Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or payment of Future Response Costs or Respondents' Costs.

88. Except for the payment by the United States in Section XIX of this Settlement Agreement and as provided in the Respondents' reservations of rights in Section XXIII herein, Respondents further agree that they shall not seek or accept reimbursement from the United States, and hereby certifies that it has not previously been reimbursed by the United States, for any of Respondents' Costs under any past, existing or future contracts or other agreements with, or grants or subsidies funded by or received from, the United States. If Respondents become aware of or is offered any such reimbursement or other benefit, it shall promptly give notice of the terms of this Settlement Agreement to the individual, agency or other entity that is offering or has provided such reimbursement or other benefit, and shall simultaneously notify the United States at the address specified below:

Chief, Environmental Defense Section
U.S. Department of Justice
P.O. Box 23986
Washington, D.C. 20026 3986

This Paragraph does not apply to any possible future de minimis settlement funds that Respondents may receive from any EPA special account.

89. Respondents' covenants in Paragraphs 87 and 88 are conditioned upon and shall take effect only upon the receipt by Respondents of the payment required of the United States, on behalf of Federal Respondent, pursuant to Section XIX (Payments To Respondents On Behalf Of Federal Respondent) of this Settlement Agreement.

90. Except as expressly provided in Paragraphs 92 and 94 (Non-Exempt De Micromis and De Minimis Waivers), the covenants not to sue in Paragraphs 87 and 88 shall not apply in

the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 85(b), (c), and (e)-(g), but only to the extent that Respondents' claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

91. Nothing in this Settlement Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

92. Respondents agree not to assert any claims and to waive all claims or causes of action that they may have for all matters relating to the Site, including for contribution, against any person where the person's liability to Respondents with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials.

93. The waiver in Paragraph 92 shall not apply with respect to any defense, claim, or cause of action that a Respondent may have against any person meeting the above criteria if such person asserts a claim or cause of action relating to the Site against such Respondent. This waiver also shall not apply to any claim or cause of action against any person meeting the above criteria if EPA determines:

a. that such person has failed to comply with any EPA requests for information or administrative subpoenas issued pursuant to Section 104(e) or 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) or 9622(e), or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site, or has been convicted of a criminal violation for the conduct to which this waiver would apply and that conviction has not been vitiated on appeal or otherwise; or

b. that the materials containing hazardous substances contributed to the Site by such person have contributed significantly, or could contribute significantly, either individually or in the aggregate, to the cost of response action or natural resource restoration at the Site.

94. Respondents agree not to assert any claims and to waive all claims or causes of action that they may have for all matters relating to the Site, including for contribution, against any person that has entered into a final de minimis settlement under Section 122(g) of CERCLA, 42 U.S.C. § 9622(g), with EPA with respect to the Site as of the Effective Date. This waiver shall not apply with respect to any defense, claim, or cause of action that a Respondent may have against any person if such person asserts a claim or cause of action relating to the Site against such Respondent.

95. The United States, including Federal Respondent, covenants not to sue and agrees not to assert any claims or causes of action against EPA, Respondents, or any other party with respect to the Work, Future Response Costs, Respondents' Costs or this Settlement Agreement,

including, but not limited to, claims for any refund or credit against any future liability with regard to the payment pursuant to Paragraph 79.

XXIII. RESERVATION OF RIGHTS BY RESPONDENTS

96. The covenants not to sue and waivers set forth in Section XXII above do not pertain to any matters other than those expressly identified therein. Respondents expressly reserve, jointly and severally, and this Settlement Agreement is without prejudice to, all rights, claims and causes of action against the United States with respect to all other matters not expressly included within the covenant not to sue in Section XXII, including, but not limited to:

a. claims and actions brought by Respondents to enforce the terms of this Settlement Agreement against Federal Respondent;

b. liability for performance of response action other than the Work, including, but not limited to liability and claims relating to or arising from any RD/RA and/or any other remedial actions related to the Site;

c. claims against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or payment of Future Response Costs or Respondents' Costs that are based on the allegation that hazardous substances have migrated to the Site through groundwater flow, surface water transport pathways, or air-borne soil from federal facilities;

d. liability arising from the past, present, or future disposal, release or threat of release of Waste Material outside of the Site, including, but not limited to claims at other sites arising from the direct or indirect shipment of Waste Material from the Site, except for shipment of Waste Material by or on behalf of Respondents in the course of the Respondents' performance of the Work at the Site;

e. liability for costs incurred or to be incurred by the United States that are not included within the definition of Future Response Costs, plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a); including, but not limited to direct and indirect costs that the United States incurred or paid at or in connection with the Site up to the Effective Date of this Settlement Agreement (i.e. past response costs), plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a);

f. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry, the United States Corps of Engineers or the State of Texas related to the Site, plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a);

g. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

h. liability arising from any future arrangement for disposal or treatment of a hazardous substance, pollutant or contaminant at the Site by the United States after the Effective Date of this Settlement Agreement;

i. criminal liability; and

j. toxic tort claims, including, but not limited to claims for property damage or diminution of value of property.

97. Except as expressly provided in Paragraphs 92 and 94 (Non-Exempt De Micromis and De Minimis Waivers), notwithstanding anything in this Settlement Agreement to the contrary, including the contribution protection provided in Paragraph 101, each of the Respondents expressly reserves its right to seek recovery pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, from each other Respondent or any person not a party to this Settlement Agreement for the amount of Respondents' Costs incurred by such Respondent that exceeds that Respondent's final allocated share of Respondents' Costs.

XXIV. OTHER CLAIMS

98. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents.

99. Except as expressly provided in Paragraphs 92 and 94 (Non-Exempt De Micromis and De Minimis Waivers) and Sections XX (Covenant Not to Sue or Take Administrative Action by EPA), XXII (Covenant Not to Sue by Respondents and Federal Respondent) and Section XXV (Contribution Protection), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondents, the United States, or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States or Respondents for costs, damages and interest under Sections 106, 107, or 113 of CERCLA, 42 U.S.C. §§ 9606, 9607, or 9613.

100. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXV. CONTRIBUTION PROTECTION

101. a. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that subject to Respondents' Reservation of Rights in Section XXIII, Respondents and Federal Respondent are entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Future Response Costs.

b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondents have, as of the Effective Date, resolved their liability to the United States for the Work and Future Response Costs.

c. Except as provided in Paragraphs 92 and 94 (Non-Exempt De Micromis and De Minimis Waivers) and Sections XX. (Covenant Not To Sue Or Take Administrative Action By EPA) and XXII (Covenant Not To Sue By Respondents and Federal Respondent) of this Settlement Agreement, nothing in this Settlement Agreement precludes the United States or Respondents from asserting any claims, causes of action, or demands against any persons not parties to this Settlement Agreement for indemnification, contribution, or cost recovery. Nothing herein diminishes the right of the United States, pursuant to Sections 113(f)(2) and 113(f)(3) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9613(f)(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2) of CERCLA.

XXVI. INDEMNIFICATION

102. Respondents shall indemnify, save, and hold harmless the United States its officials, agents, contractors, subcontractors, employees, and representatives from any and all claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondents agree to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondents in carrying out activities pursuant to this Settlement Agreement. Neither Respondents nor any such contractor shall be considered an agent of the United States. The Parties recognize that the payment obligations of Respondent Department of State Health Services on behalf of San Antonio State Chest Hospital n/k/a Texas Center for Infectious Disease under this Settlement Agreement can only be paid from appropriated funds legally available for such purpose. Nothing in this Settlement Agreement shall be interpreted or construed as a commitment or requirement that Department of State Health Services on behalf of San Antonio State Chest Hospital n/k/a Texas Center for Infectious Disease obligate or pay funds in contravention of the Texas Constitution, Art. III, §§ 49, 49a, 50, or 51.

103. The United States shall give Respondents notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondents prior to settling such claim.

104. Except as provided in the reservations in Section XXIII, Respondents waive all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site. In addition, except as provided in the reservations in Section XXIII, Respondents shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement,

or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site.

XXVII. INSURANCE

105. At least seven (7) days prior to commencing any on-site Work under this Settlement Agreement, Respondents or their contractors or subcontractors that are actually conducting work on the Site shall secure, and shall maintain for the duration of their on-site Work, comprehensive general liability insurance of $1,000,000 per occurrence ($2,000,000 aggregate) and automobile insurance with limits of $1,000,000, combined single limit, naming the EPA as an additional insured. Within the same period, Respondents shall provide EPA with certificates of such insurance. Upon EPA's request, Respondents shall submit such certificates for each such contractor or subcontractor each year on the anniversary of the Effective Date if the same contractor or subcontractor is still conducting on-site Work. In addition, for the duration of the on-site Work, Respondents shall ensure that their contractors or subcontractors who are actually conducting work on the Site satisfy all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the on-site Work on behalf of Respondents in furtherance of this Settlement Agreement. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVIII. FINANCIAL ASSURANCE

106. Respondents, collectively and not individually and other than DSHS on behalf of San Antonio State Chest Hospital n/k/a Texas Center for Infectious Disease, shall demonstrate their financial assurance in an amount no less than EPA's estimated costs to complete the RI/FS for the Site, currently estimated by EPA to cost a total of $2,000,000, ability to complete the Work required by this Settlement Agreement, and ability to pay all claims that arise from the performance of the Work by obtaining and presenting to EPA within sixty (60) days of the Effective Date of this Settlement Agreement, one of the following:

a. a performance bond guaranteeing payment and/or performance of the Work;

b. an irrevocable letter of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling EPA's current estimated costs of the RI/FS for the Site of $2,000,000;

c. trust fund administered by a trustee acceptable in all respects to EPA;

d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;

e. a corporate guarantee to perform the Work by one or more parent corporations or subsidiaries of Respondents, or by one or more unrelated corporations that have a substantial business relationship with at least one of the Respondents, including a demonstration that such company satisfies the financial test requirements of 40 C.F.R. § 264.143(f);

f. a corporate guarantee to perform the Work provided by one or more of Respondents, including a demonstration that any such Respondent satisfies the requirements of 40 C.F.R. § 264.143(f); or

g. internal financial information sufficient to demonstrate to EPA's satisfaction that Respondents have sufficient assets available to perform the Work, currently estimated by EPA to cost a total of $2,000,000.

107. Any and all financial assurance instruments provided pursuant to this Section shall be in a form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondents shall within thirty (30) days after receipt of EPA's notification of such determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 106 above. In addition, if at any time EPA notifies Respondents that the anticipated cost of completing the Work has increased, then within thirty (30) days of such notification, Respondents shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondents' inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

108. If Respondents seek to ensure completion of the Work through a guarantee pursuant to 104(e) or 104(f) of this Settlement Agreement, Respondents shall: (a) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. § 264.143(f); and (b) resubmit sworn statements conveying the information required by 40 C.F.R. § 264.143(f) annually, on the anniversary of the Effective Date, to EPA. For the purposes of this Settlement Agreement, whenever 40 C.F.R. § 264.143(f) references "sum of current closure and post closure costs estimates and the current plugging and abandonment costs estimates," the current EPA cost estimate of $2,000,000 for the Work at the Site shall be used in relevant financial test calculations unless the amount of financial security has been reduced as provided in Paragraph 109.

109. If, after the Effective Date, Respondents can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 106 of this Section, Respondents may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondents shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondents may seek dispute resolution pursuant to Section XV (Dispute Resolution). Respondents may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

110. Respondents may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event

of a dispute, Respondents may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

111. The obligation to maintain financial assurance shall terminate once the Record of Decision is issued by EPA.

XXIX. INTEGRATION/APPENDICES

112. This Settlement Agreement, its appendices, and any deliverables, technical memoranda, specifications, schedules, documents, plans, reports (other than progress reports), etc. that will be developed pursuant to this Settlement Agreement and become incorporated into and enforceable under this Settlement Agreement constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:

"Appendix A" is the list of Respondents.

"Appendix B" is the Statement of Work.

"Appendix C" is the site map.

XXX. ADMINISTRATIVE RECORD

113. The EPA will determine the contents of the administrative record file for selection of the remedial action. Respondents shall submit to EPA documents developed during the course of the RI/FS upon which selection of the response action may be based. Upon request of EPA, Respondents shall provide copies of plans, task memoranda for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports and other reports. Upon request of EPA, Respondents shall additionally submit any previous studies conducted under state, local, or other federal authorities relating to selection of the response action and all communications between Respondents and state, local, or other federal authorities concerning selection of the response action. At EPA's discretion, Respondents shall establish a community information repository at or near the Site, to house one copy of the administrative record.

XXXI. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

114. The effective date of this Settlement Agreement shall be the date it is signed by EPA.

115. This Settlement Agreement may be amended by mutual agreement of EPA, Respondents, and Federal Respondent. Amendments shall be in writing and shall be effective when signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Settlement Agreement.

116. No informal advice, guidance, suggestion, or comment by the EPA Project Coordinator or other EPA representatives regarding reports, plans, specifications, schedules, and any other writing submitted by Respondents shall relieve Respondents of their obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement unless it is formally modified.

XXXII. NOTICE OF COMPLETION OF WORK

117. When EPA determines that all Work has been fully performed in accordance with this Settlement Agreement with the exception of any continuing obligations required by this Settlement Agreement, including but not limited to, payment of Future Response Costs and record retention, EPA will provide written notice to Respondents. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents modify the RI/FS Work Plan if appropriate in order to correct such deficiencies, in accordance with Paragraph 34 (Modification of the RI/FS Work Plan). Failure by Respondents to implement the approved modified RI/FS Work Plan shall be a violation of this Settlement Agreement. EPA will provide a copy of any notice issued under this Paragraph to the Federal Respondent.

It is so ORDERED AND AGREED this 12th day of March, 2010.

BY: Pamela Phillips, Acting DATE: 3/12/2010

Samuel Coleman, P.E.
Superfund Division Director
U.S. Environmental Protection Agency,
Region 6

APPENDIX A
LIST OF RESPONDENTS

BAE Systems Resolution, Inc. (f/k/a/ Santana Resolution Corporation; f/k/a/ Stewart & Stevenson, Inc.)

Bridgestone Americas Tire Operations, LLC (f/k/a Bridgestone Firestone, Inc.)

Department of State Health Services (DSHS) on behalf of San Antonio State Chest Hospital n/k/a Texas Center for Infectious Disease

PerkinElmer Automotive Research, Inc. (f/k/a EG&G Automotive Research, Inc.)

Exxon Mobil Corporation

Flint Group Incorporated (f/k/a Flint Ink Corporation)

National Radiator Company (formerly doing business as National Lube N Zoom), a dissolved Texas Corporation

Structural Metals, Inc.

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
SITE	§	STUDY
San Antonio, Texas	§	
	§	
BAE Systems Resolution, Inc.,	§	
Bridgestone Americas Tire Operations,	§	
LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
Exxon Mobil Corporation, Flint Group	§	
Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
	§	
RESPONDENTS; and	§	
	§	
United States Defense Logistics Agency,	§	Proceeding Under Sections 104, 107, and
Defense Reutilization and	§	122 of the Comprehensive
Marketing Service,	§	Environmental Response, Compensation,
	§	and Liability Act, as amended, 42 U.S.C.
FEDERAL RESPONDENT	§	§§ 9604, 9607, and 9622

THE UNDERSIGNED RESPONDENT enters into this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study in the matter of CERCLA Docket No. 06-05-10 relating to the R&H Oil/Tropicana Energy Site, San Antonio, Bexar County, Texas:

FOR RESPONDENT: BAE SYSTEMS RESOLUTION, INC

16285 Park Ten Place, Houston, Tx 77084
Print Address

By: Gary Elkin
Signature

1/19/2010
Date

Gary Elkin
Print Name of Signatory

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

Gary Elkin
Print Name

16285 Park Ten Place, Houston, TX 77084
Print Address

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
SITE	§	STUDY
San Antonio, Texas	§	
	§	
BAE Systems Resolution, Inc.,	§	
Bridgestone Americas Tire Operations,	§	
LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
Exxon Mobil Corporation, Flint Group	§	
Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
RESPONDENTS; and	§	
	§	
United States Defense Logistics Agency,	§	Proceeding Under Sections 104, 107, and
Defense Reutilization and	§	122 of the Comprehensive
Marketing Service,	§	Environmental Response, Compensation,
	§	and Liability Act, as amended, 42 U.S.C.
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FOR RESPONDENT: Bridgestone Americas Tire Operations, LLC

535 Marriott Drive, Nashville, TN 37214

Print Address

By: _____ January 15, 2010

Signature Date

Jane A. Johnson, Manager of Remediation

Print Name of Signatory

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

Heidi H. Bumpers, Counsel, Jones Day

Print Name

51 Louisiana Avenue, NW, Washington, DC 20001

Print Address

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
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	§	
BAE Systems Resolution, Inc.,	§	
Bridgestone Americas Tire Operations,	§	
LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
Exxon Mobil Corporation, Flint Group	§	
Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
RESPONDENTS; and	§	
	§	
United States Defense Logistics Agency,	§	Proceeding Under Sections 104, 107, and
Defense Reutilization and	§	122 of the Comprehensive
Marketing Service,	§	Environmental Response, Compensation,
	§	and Liability Act, as amended, 42 U.S.C.
FEDERAL RESPONDENT	§	§§ 9604, 9607, and 9622

THE UNDERSIGNED FEDERAL RESPONDENT enters into this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study in the matter of CERCLA Docket No. 06-05-10 relating to the R&H Oil/Tropicana Energy Site, San Antonio, Bexar County, Texas:

FOR FEDERAL RESPONDENT: DEFENSE REUTILIZATION AND MARKETING SERVICE, U.S. DEFENSE LOGISTICS AGENCY

Print Address: 74 N. Washington, HDI Federal Center, Battle Creek, MI 49017-3092

By Twila C. Gonzales — February 25, 2010

TWILA C. GONZALES, SES — Date

Director

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

Matt Pausch, Counsel — Print Name

Defense Reutilizaton & Marketing Service, U.S. Defense Logistics Agency, 74 N. Washington, HDI Federal Center, Battle Creek, MI 49017-3092 Print Address

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
SITE	§	STUDY
San Antonio, Texas	§	
	§	
BAE Systems Resolution, Inc.,	§	
Bridgestone Americas Tire Operations,	§	
LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
Exxon Mobil Corporation, Flint Group	§	
Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
	§	
RESPONDENTS; and	§	
	§	
United States Defense Logistics Agency,	§	Proceeding Under Sections 104, 107, and
Defense Reutilization and	§	122 of the Comprehensive
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FEDERAL RESPONDENT	§	§§ 9604, 9607, and 9622

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FOR RESPONDENT: Department of State Health Services

1100 W. 49th Street, MC-1911, Austin, TX 78756
Print Address

By: _____ 1/22/10
Signature Date

David Lakey, MD
Print Name of Signatory

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

Mary Smith
Print Name

P O Box 12548 Austin, Texas 78711-2548
Print Address

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
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BAE Systems Resolution, Inc.,	§	
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LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
Exxon Mobil Corporation, Flint Group	§	
Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
	§	
RESPONDENTS; and	§	
	§	
United States Defense Logistics Agency,	§	Proceeding Under Sections 104, 107, and
Defense Reutilization and	§	122 of the Comprehensive
Marketing Service,	§	Environmental Response, Compensation,
	§	and Liability Act, as amended, 42 U.S.C.
FEDERAL RESPONDENT	§	§§ 9604, 9607, and 9622

THE UNDERSIGNED RESPONDENT enters into this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study in the matter of CERCLA Docket No. 06-05-10 relating to the R&H Oil/Tropicana Energy Site, San Antonio, Bexar County, Texas:

FOR RESPONDENT: EXXON MOBIL CORPORATION AND ITS WHOLLY OWNED SUBSIDIARIES AND AFFILIATES

5959 Las Colinas Blvd, Irving, TX 75039
Print Address

By: _____ FEBRUARY 4, 2010
Signature Date

MICHAEL W. SCHWEHR, Agent and Attorney-in-Fact
Print Name of Signatory

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

EARL F. MORAN
Print Name

1555 Poydras Street, Box 4 (UPS only - Suite 1710)
Print Address
New Orleans, LA 70112

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE San Antonio, Texas	§	
BAE Systems Resolution, Inc., Bridgestone Americas Tire Operations, LLC, Department of State Health Services, PerkinElmer Automotive Research, Inc., Exxon Mobil Corporation, Flint Group Incorporated, National Radiator Company, a dissolved Texas corporation, and Structural Metals, Inc.,	§	U.S. EPA Docket No. 06-05-10
RESPONDENTS; and	§	
United States Defense Logistics Agency, Defense Reutilization and Marketing Service,	§	Proceeding Under Sections 104, 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607, and 9622
FEDERAL RESPONDENT	§	

THE UNDERSIGNED RESPONDENT enters into this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study in the matter of CERCLA Docket No. 06-05-10 relating to the R&H Oil/Tropicana Energy Site, San Antonio, Bexar County, Texas:

FOR RESPONDENT: FLINT GROUP INCORPORATED

14909 N BECK RD, PLYMOUTH, MI 48170
Print Address

By: _____ 1/18/2010
Signature Date

LAWRENCE E KING
Print Name of Signatory VICE PRESIDENT, GENERAL COUNSEL & SECRETARY

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

LAWRENCE E KING
Print Name

14909 N BECK RD, PLYMOUTH, MI 48170
Print Address

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
SITE	§	STUDY
San Antonio, Texas	§	
	§	
BAE Systems Resolution, Inc.,	§	
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LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
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Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
RESPONDENTS; and	§	
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United States Defense Logistics Agency,	§	Proceeding Under Sections 104, 107, and
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FEDERAL RESPONDENT	§	§§ 9604, 9607, and 9622

THE UNDERSIGNED RESPONDENT enters into this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study in the matter of CERCLA Docket No. 06-05-10 relating to the R&H Oil/Tropicana Energy Site, San Antonio, Bexar County, Texas:

FOR RESPONDENT: NATIONAL RADIATOR COMPANY INC;
A DISSOLVED TEXAS CORPORATION - 11023 MT BONACHO SAT 78243
Print Address

By: Rodolfo N Valdes EXECUTOR OF ESTATE OF RODOLFO G VALDES 2-19-2010
Signature Date

RODOLFO N VALDES, EXECUTOR OF ESTATE OF RODOLFO G VALDE
Print Name of Signatory

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

Print Name

111 Soledad Ste 1700 San Antonio, TX 78205
Print Address

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY SITE San Antonio, Texas	§	INVESTIGATION/FEASIBILITY STUDY
BAE Systems Resolution, Inc., Bridgestone Americas Tire Operations, LLC, Department of State Health Services, PerkinElmer Automotive Research, Inc., Exxon Mobil Corporation, Flint Group Incorporated, National Radiator Company, a dissolved Texas corporation, and Structural Metals, Inc.,	§	U.S. EPA Docket No. 06-05-10
RESPONDENTS; and	§	
United States Defense Logistics Agency, Defense Reutilization and Marketing Service,	§	Proceeding Under Sections 104, 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607, and 9622
FEDERAL RESPONDENT	§	

THE UNDERSIGNED RESPONDENT enters into this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study in the matter of CERCLA Docket No. 06-05-10 relating to the R&H Oil/Tropicana Energy Site, San Antonio, Bexar County, Texas:

FOR RESPONDENT: PerkinElmer Automotive Research, Inc.

940 Winter Street, Waltham, MA 02451 Attn: John Healy
Print Address

By: _____ 1/25/10
Signature Date

John L. Healy, President
Print Name of Signatory

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

John L. Healy
Print Name

PerkinElmer, 940 Winter Street, Waltham, MA 02451
Print Address

IN THE MATTER OF:	§	ADMINISTRATIVE SETTLEMENT
	§	AGREEMENT AND ORDER ON
	§	CONSENT FOR REMEDIAL
R&H OIL/TROPICANA ENERGY	§	INVESTIGATION/FEASIBILITY
SITE	§	STUDY
San Antonio, Texas	§	
	§	
BAE Systems Resolution, Inc.,	§	
Bridgestone Americas Tire Operations,	§	
LLC, Department of State Health Services,	§	U.S. EPA Docket No. 06-05-10
PerkinElmer Automotive Research, Inc.,	§	
Exxon Mobil Corporation, Flint Group	§	
Incorporated, National Radiator Company,	§	
a dissolved Texas corporation, and	§	
Structural Metals, Inc.,	§	
	§	
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FOR RESPONDENT: STRUCTURAL METALS, INC.

6565 N. MACARTHUR BLVD., STE 800, IRVING, TEXAS 75039
Print Address

By: _____ 18 JANUARY 2010
Signature Louis A. Federle Treasurer — Date

Print Name of Signatory

Written notice to the following notification contact person will constitute complete satisfaction of any written notice requirement (if any) of this Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study with respect to the Respondent who has signed above:

JIM AUBUCHON
Print Name

6565 N. MACARTHUR BLVD., STE 800, IRVING, TX 75039
Print Address

APPENDIX B
STATEMENT OF WORK

APPENDIX B
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE
SAN ANTONIO, BEXAR COUNTY, TEXAS

TABLE OF CONTENTS

APPENDIX B
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE
SAN ANTONIO, BEXAR COUNTY, TEXAS

1. INTRODUCTION

1. This Statement of Work (SOW) provides an overview of work that will be carried out by Respondents as they implement a Remedial Investigation and Feasibility Study (RI/FS) for the R&H Oil/Tropicana Energy Site (Site). This RI/FS SOW is attached to the Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study (Settlement Agreement) for the Site and is a supporting document for the Settlement Agreement. Technical work described in the SOW is intended to provide more information to Respondents for purposes of implementing the Settlement Agreement and is not intended to change the meaning of any Settlement Agreement language. This SOW is also consistent with both the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP). Any discrepancies between the Settlement Agreement and SOW are unintended, and whenever necessary, the Settlement Agreement will control in any interpretive disputes.

2. The RI/FS is expected to be an iterative process. This SOW outlines a decision process that will be used to focus sampling programs to gather data that are needed for the decision process. The U.S. Environmental Protection Agency (EPA) understands there may be concern on the part of Respondents that such an iterative process could lead to substantial increases in the size, cost, and scope of the RI/FS. However, EPA has an obligation under CERCLA to protect human health and the environment wherever hazardous substances have been discharged or migrated in the environment. To balance these competing interests, EPA's Office of Solid Waste and Emergency Response is promoting more effective strategies (i.e., Triad Approach) for characterizing, monitoring, and cleaning up hazardous waste sites. The Triad Approach integrates systematic planning, dynamic work plans, and on-site analytical tools used to support decisions about hazardous waste sites. Additional information regarding the Triad Approach is attached and can be found at the following web site: http://www.clu-in.org/conf/tio/triad_012303/.

3. The purpose of the RI/FS is to investigate the nature and extent of contamination for the Site, to assess the potential risk to human health and the environment, to develop and evaluate potential remedial action alternatives, and to recommend a preferred alternative. The RI and FS are interactive and will be conducted concurrently, to the extent practicable, in a manner that allows information and data collected during the RI to influence the development of remedial alternatives during the FS, which in turn affect additional information and data needs and the scope of any necessary treatability studies and risk assessments.

4. Respondents will conduct the RI/FS and will produce draft RI and FS reports that are in accordance with the Settlement Agreement. The RI/FS will be consistent with the Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (U.S. EPA, Office of Emergency and Remedial Response, October 1988), Data Quality Objectives (DQOs) planning process (EPA QA/G-4, August 2000), and other applicable guidance that EPA uses in conducting an RI/FS (a list of the primary guidance is attached), including potentially applicable guidance released by EPA after the effective date of this SOW. EPA is aware that not all guidance used for the RI/FS purposes may be applicable to the Site. EPA Project Managers for sites have the authority under the NCP to determine when application of any guidance would be inappropriate. Respondents may raise such guidance issues they consider appropriate during the implementation of the Settlement Agreement. EPA's decisions regarding guidance applicability will be incorporated into document approval correspondence or in other written correspondence as appropriate.

5. The RI/FS Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA describes the suggested report format and content for the draft RI and FS reports. Respondents will furnish all necessary personnel, materials, and services needed for, or incidental to, performing the RI/FS, except as otherwise specified in the Settlement Agreement.

6. At the completion of the RI/FS, EPA will be responsible for the selection of a Site remedy and will document this selection in one or more Records of Decision (RODs). The response action alternatives selected by EPA will meet the cleanup standards specified in Section 121 of CERCLA, 42 U.S.C. § 9621; the selected remedy will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements (ARARs), will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies, to the maximum extent practicable, and will address the statutory preference for treatment as a principal element, as appropriate under the NCP. The final RI/FS report, as approved by EPA, will, with the administrative record, form the basis for the selection of the Site's remedy and will provide the information necessary to support development of one or more RODs.

As specified in Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1), EPA will provide oversight of Respondents' activities throughout implementation of the Settlement Agreement. Respondents will support EPA's initiation and conduct of activities related to implementation of oversight activities.

Purpose of the Statement of Work

7. This SOW sets forth certain requirements of the Settlement Agreement for implementation of the Work pertaining to a RI/FS for the Site. The Respondents shall undertake the RI/FS according to the Settlement Agreement, including, but not limited to, this SOW.

Objectives of the Remedial Investigation/Feasibility Study

8. The objectives of the RI/FS are to investigate the nature and extent of contamination at the Site and to develop and evaluate potential remedial alternatives, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, 42 U.S.C. § 9601, et seq.), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan or NCP). Specifically, these objectives are to determine the presence or absence, types, and quantities (concentrations) of contaminants; mechanism of contaminant release to pathway(s); direction of pathway(s) transport; boundaries of source(s) and pathway(s); and environmental/public health receptors.

Scope of the Remedial Investigation and Feasibility Study

9. The general scope of the RI/FS shall be to address all contamination at the Site resulting from the hazardous substances present at the Site.

Description of the Site

10. The Site area totals approximately six to seven acres and is composed of two tracts: a northern tract located at 403 Somerset Road and a southern tract located at 507 (formerly 419 in proposed listing documentation) Somerset Road in San Antonio, Bexar County, Texas. The northern tract previously housed oil refineries and most recently a waste oil recycling facility. The southern tract previously housed oil refineries, a petroleum distribution facility, and most recently fuel/gasoline blending operations. The waste oil recycling activities on the northern tract and the fuel/gasoline blending operations on the southern tract ceased in approximately the late 1980's or early 1990's. The Site is presently inactive. The Site is located approximately five miles southwest of downtown San Antonio. The Site is bordered by an auto service center to the north, the Union Pacific Railroad line, an auto repair and parts establishment, and Kelly Air Force Base to the west, residential, commercial, and industrial development to the south and east and Somerset Road to the east. The Site is located in a densely populated area of San Antonio with ten schools in a one-mile radius.

11. In August 2001, EPA began Superfund time-critical removal actions at the Site. Removal actions on the northern portion of the Site included the removal of asbestos containing materials from on-site containers, equipment, piping, and within buildings; removal of contaminated materials from within on-site containers, equipment, and piping; removal (demolition) of on-site containers, equipment, piping and other contaminated items and removal of contaminated soils. Removal actions on the southern portion of the Site included the removal

of contaminated materials from within on-site containers, equipment, and piping, including an underground storage tank; removal (demolition) of on-site containers, equipment, piping and other contaminated items; and removal of contaminated soils. In June 2001, the EPA proposed the Site to the National Priorities List (NPL), but to date, the Site has not been listed. In March and April 2004, some of the Respondents voluntarily conducted a preliminary investigation at the Site to gain a better understanding of the current Site conditions. This investigation, the scope of which was not approved by EPA in advance, involved collection of soil and groundwater samples. The data collected from this investigation have not been validated by or formally approved by EPA.

II. PERFORMANCE STANDARDS

12. The Performance Standards for this RI/FS shall include substantive requirements, criteria, or limitations which are specified in the Settlement Agreement, including, but not limited to, this SOW. Submissions approved by the EPA are an enforceable part of the Settlement Agreement; consequently, cleanup goals and other substantive requirements, criteria, or limitations which are specified in EPA-approved submissions are Performance Standards. The EPA will use the Performance Standards to determine if the work, including, but not limited to, the RI/FS, has been completed. The Respondents shall ensure that the RI/FS is consistent with the EPA's "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b, hereinafter "the RI/FS guidance") and other applicable sections of EPA guidance cited herein. If the EPA approves a schedule for any work pursuant to the Settlement Agreement, the schedule shall supersede any timing requirements established in the RI/FS guidance or other guidance. Likewise, if the EPA, pursuant to the Settlement Agreement, requires the Respondents to perform certain work at a point in time which is not consistent with the RI/FS guidance or other guidance, the Respondents shall perform the work as specified by the Settlement Agreement. For example, on page B-2, the RI/FS guidance says that the Field Investigation is complete when the contractors or subcontractors are demobilized from the field; however, if the EPA, pursuant to the Settlement Agreement, requires the Respondents to perform additional field investigation activities once the contractors or subcontractors have demobilized, the Respondents shall remobilize the contractors or subcontractors and perform the additional work. Except where it is inconsistent with this Settlement Agreement, as determined by the EPA, the RI/FS guidance and the other applicable sections of EPA guidance cited herein are Performance Standards.

III. ROLE OF THE EPA

13. The EPA's approval of deliverables, including, but not limited to, submissions, is administrative in nature and allows the Respondents to proceed to the next steps in implementing the work of the RI/FS. The EPA's approval does not imply any warranty of performance, that the RI/FS, when completed, will meet Performance Standards, or that the RI/FS will function properly and be ultimately accepted by the EPA. The EPA retains the right to disapprove

submissions during the RI/FS. The EPA may disapprove deliverables including, but not limited to, submissions concerning such matters as the contractor selection, plans and specifications, work plans, processes, sampling, analysis and any other deliverables within the context of the Settlement Agreement. If a submission is unacceptable to the EPA, the EPA may require the Respondents to make modifications in the submission, and the EPA may require the Respondents to do additional work to support those modifications. That is, if a submission reports certain work that is unacceptable to the EPA, the EPA may require the Respondents to modify the submission text and to perform the work until it is acceptable to the EPA. The Respondents shall modify the submission and perform the work as required by the EPA.

IV. RESPONDENTS' KEY PERSONNEL

Respondents' Project Coordinator

14. When necessary, as determined by the EPA, the EPA will meet with the Respondents and discuss the performance and capabilities of the Respondents' Project Coordinator. When the Project Coordinator's performance is not satisfactory, as determined by the EPA, the Respondents shall take action, as requested by the EPA, to correct the deficiency. If, at any time, the EPA determines that the Project Coordinator is unacceptable for any reason, the Respondents, at the EPA's request, shall bar the Project Coordinator from any work under the Settlement Agreement and give notice of the Respondents' selected new Project Coordinator to the EPA.

Respondents' Quality Assurance Manager

15. Oversight, including, but not limited to confirmation sampling, by the Respondents' Quality Assurance Manager (QA Manager) will be used to provide confirmation and assurance to the Respondents and to the EPA that the Respondents are performing the RI/FS in a manner that will meet the Performance Standards. The QA Manager shall ensure that the work performed by the Respondents meet the standards in the Quality Assurance Project Plan described in this SOW. The QA Manager shall selectively test and inspect the work performed by the Respondents.

V. TASKS TO BE PERFORMED AND DELIVERABLES

Conduct of the Remedial Investigation/Feasibility Study

16. This SOW specifies the Work to be performed and the deliverables which shall be produced by the Respondents. The Respondents shall conduct the RI/FS in accordance with this SOW, Settlement Agreement, and all applicable guidance that the EPA uses in conducting RI/FS projects under CERCLA, as well as any additional requirements in the Settlement Agreement. The Respondents shall furnish all personnel, materials, and services necessary for, and incidental

to, performance of the RI/FS, except as otherwise specified in the Settlement Agreement or SOW.

Submittal of Deliverables

17. All draft and final deliverables specified in this SOW shall be provided in hard copy, by the Respondents, to the EPA (three copies), EPA's RI/FS Oversight Contractor (one copy), Texas Commission on Environmental Quality (TCEQ, two copies), and the Natural Resource Trustees[1] (one copy each). Draft and Final deliverables shall be provided in electronic format (specifically, Microsoft Word and Adobe® PDF format [only final deliverables]) to the EPA. Final deliverables shall be provided in hard copy and electronic format (specifically, Adobe® PDF format) to the Information Repository(ies) established for the Site. Additionally, all deliverables specified in this SOW shall be submitted, by the Respondents, according to the requirements of this SOW and Appendix A (Schedule of Deliverables/Meetings). In addition to the Deliverables identified in Appendix A, Respondents shall provide to EPA an updated database with the bi-monthly status report for reporting periods in which validated data have been uploaded to the database.

18. All deliverables shall be developed in accordance with applicable sections of the guidance documents listed in Appendix B[2] (Guidance Documents) to this SOW. Subject to the provisions regarding EPA Approval of Plans and other Submissions in Section X of the Settlement Agreement, if the EPA disapproves of or requires revisions to any of these deliverables, in whole or in part, the Respondents shall submit to the EPA, within thirty (30) calendar days after completing discussion of EPA's directions or comments on the deliverable (and in no event later than sixty (60) calendar days after receiving EPA's comments or directions on the deliverable), revised plans which are responsive to such directions or comments.

Tasks to be Performed by the Respondents

19. The Respondents shall perform each of the following Tasks (Tasks 1-10) as specified in this SOW. These Tasks shall be developed in accordance with applicable sections of the

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[1]The Natural Resource Trustees for the Site have been preliminarily identified as the U.S. Department of the Interior, U.S. Fish and Wildlife Service, United States Geological Survey, Texas Commission on Environmental Quality, Texas Parks and Wildlife Department, and Texas General Land Office.

[2]Appendix B of this SOW does not include all guidance documents that are applicable to the RI/FS for the Site. The Respondents should consult with EPA's Remedial Project Manager for additional applicable guidance and to ensure that these guidance documents have not been superseded.

guidance documents listed in Appendix B (Guidance Documents) to this SOW and any additional guidance applicable to the RI/FS process.

Task 1: Scoping

20. The purpose of Task 1 (Scoping) is to determine how the RI/FS will be managed and controlled. The following activities shall be performed by the Respondents as part of Task 1:

a) Attend Scoping Phase Meeting - The Respondents shall contact the EPA's Remedial Project Manager after the Effective Date of the Settlement Agreement to schedule a scoping phase meeting. The scoping phase meeting shall occur within fourteen (14) calendar days after the Effective Date of the Settlement Agreement.

b) Evaluate Existing Information - The Respondents shall compile and review all existing Site data. The Respondents shall refer to Table 2-1 (Data Collection Information Sources) of the RI/FS Guidance for a list of data collection information sources, and the Respondents shall exhaust all of those sources in compiling the data.

The Respondents shall compile all existing information describing hazardous substance sources, migration pathways, and potential human and environmental receptors. The Respondents shall compile all existing data relating to the varieties and quantities of hazardous substances released on and near the Site. The Respondents shall compile and review all available data relating to past disposal practices of any kind on and near the Site. The Respondents shall compile existing data concerning the physical and chemical characteristics of the hazardous substances, and their distribution among the environmental media (ground water, soil, surface water, sediments, and air) on and near the Site.

The Respondents shall compile existing data which resulted from any previous sampling events that may have been conducted on and near the Site. The Respondents shall gather existing data which describe previous responses that have been conducted on and near the Site by local, state, federal, or private parties.

The Respondents shall gather existing information regarding geology, hydrogeology, hydrology, meteorology, and ecology of the Site. The Respondents shall gather existing data regarding background ground water, background soil, background surface water, background sediments, and background air characteristics. The Respondents shall gather existing data regarding demographics and land use. The Respondents shall gather existing data which identify and locate residential, municipal, or industrial wells on and near the Site. The Respondents shall gather existing data which identify surface water uses for areas surrounding the Site including, but not limited to, downstream of the Site. The Respondents shall gather existing information describing the flora and fauna of the

Site. The Respondents shall gather existing data regarding threatened, endangered, or rare species, sensitive environmental areas, or critical habitats on and near the Site. The Respondents shall compile existing results from any previous biological testing to document any known ecological effect such as acute or chronic toxicity or bioaccumulation in the food chain.

The Respondents shall use data compiled and reviewed to describe additional data needed to characterize the Site, to better define potential applicable or relevant and appropriate requirements (ARARs), and to develop a range of preliminarily identified remedial alternatives.

Respondents and EPA have developed the Technical Scope of Work included as Appendix D to this SOW to address some, but not all, of the above Task 1 requirements. This appendix will be used to prepare the Draft RI/FS Work Plan as required in Task 2 below, but the appendix is not intended to replace or supercede the RI/FS Work Plan.

Task 2: **Remedial Investigation and Feasibility Study Work Plan**

21. The Respondents shall prepare and submit a Draft RI/FS Work Plan within sixty (60) calendar days after the Scoping Phase Meeting. The Respondents shall use information from appropriate EPA guidance, technical direction provided by the EPA's Remedial Project Manager, and the Technical Scope of Work in Appendix D as the basis for preparing the RI/FS Work Plan.

22. The Respondents shall develop the Draft RI/FS Work Plan (WP) in conjunction with the Draft RI/FS Sampling and Analysis Plan (Task 3, RI/FS Sampling and Analysis Plan) and the Draft RI/FS Site Health and Safety Plan (Task 4, RI/FS Site Health and Safety Plan), although each plan may be submitted to the EPA under separate cover. The Draft RI/FS WP shall include a comprehensive description of the Work to be performed, the methodologies to be utilized, and a corresponding schedule for completion. In addition, the Draft RI/FS WP shall include the rationale for performing the required activities.

23. Specifically, the Draft RI/FS WP shall present a statement of the problem(s) and potential problem(s) posed by the Site and the objectives of the RI/FS. Furthermore, the Draft RI/FS WP shall include a Site background summary setting forth the Site description which includes the geographic location of the Site, and to the extent possible, a description of the Site's physiography, hydrology, geology, and demographics; the Site's ecological, cultural and natural resource features; a synopsis of the Site history and a description of previous responses that have been conducted at the Site by local, state, federal, or private parties; and a summary of the existing data in terms of physical and chemical characteristics of the contaminants identified, and their distribution among the environmental media at the Site. In addition, the Draft RI/FS WP shall include a description of the site management strategy developed during scoping, and a

preliminary identification of remedial alternatives and data needs for evaluation of remedial alternatives. The Draft RI/FS WP shall reflect coordination with treatability study requirements (Task 8, Treatability Studies) and will show a process for and manner of identifying Federal and State chemical-, location-, and action-specific ARARs.

24. Finally, the major part of the Draft RI/FS WP shall be a detailed description of the Tasks (Tasks 1-10) to be performed, information needed for each Task and for the Baseline Risk Assessments, information to be produced during and at the conclusion of each Task, and a description of the Work products and deliverables that the Respondents will submit to the EPA. This includes the deliverables set forth in the remainder of this SOW; a schedule for each of the required activities which is consistent with the EPA's applicable guidance documents; a project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, data format and backup data management) and bi-monthly reports to the EPA; and meetings and presentations to the EPA at the conclusion of each major phase of the RI/FS. The Respondents shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) which describes the RI/FS WP suggested format and content.

25. The Respondents are responsible for fulfilling additional data and analysis needs identified by the EPA consistent with the general scope and objectives of this RI/FS. Because of the nature of the Site and the iterative nature of the RI/FS, additional data requirements and analyses may be identified throughout the process. If any significant additional Work is required to meet the objectives stated in the RI/FS WP, based upon new information obtained during the RI/FS, the Respondents shall submit a Draft RI/FS WP Amendment to the EPA for review and approval prior to any additional Work being conducted in accordance with the Settlement Agreement and SOW. The EPA may, at its discretion, give verbal approval for Work to be conducted prior to providing written approval of the Draft RI/FS WP Amendment.

26. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall prepare and submit to the EPA a final RI/FS Work Plan within thirty (30) calendar days after completing discussion of EPA's comments on the draft RI/FS Work Plan (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the draft RI/FS Work Plan).

Task 3: <u>RI/FS Sampling and Analysis Plan</u>

27. The Respondents shall prepare a Draft RI/FS Sampling and Analysis Plan (SAP) within sixty (60) calendar days after the Scoping Phase Meeting. This Draft RI/FS SAP shall provide a mechanism for planning field activities and shall consist of an RI/FS Field Sampling Plan and Quality Assurance Project Plan as follows:

a) RI/FS Field Sampling Plan (FSP) - The RI/FS FSP shall define in detail the sampling and data gathering methods that will be used for the project to define the nature and extent of contamination and ecological risk assessment-related studies (Task 7, Risk Assessments). It shall include, but not be limited to, sampling objectives, sample location and frequency, sampling equipment and procedures, and sample handling and analysis. The RI/FS FSP shall contain a completed Sample Design Collection Worksheet and a Method Selection Worksheet. These worksheet templates can be found in the EPA's guidance document titled "Guidance for Data Useability in Risk Assessment" (EPA 1992a). In addition, the FSP shall include a comprehensive description of the Site including geology, location, and physiographic, hydrological, ecological, cultural, and natural resource features of the Site, a brief synopses of the history of the Site, summary of existing data, and information on fate and transport and effects of chemicals. As such, the Respondents shall provide a strategy that includes both biased sampling and random sampling. The human health and ecological risk assessments require that the sampling be conducted to demonstrate that the data are statistically representative of the Site. The Respondents shall also confirm that the detection limits for all laboratories are in accordance within the goals stated in the EPA's risk assessment guidance. The FSP shall consider the use of all existing data and shall justify the need for additional data whenever existing data will meet the same objective. The FSP shall be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and field information required. The Respondents shall refer to EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) which describes the RI/FS FSP suggested format and content.

b) RI/FS Quality Assurance Project Plan (QAPP) - The RI/FS QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that will be used to achieve the desired DQOs. The DQOs shall at a minimum reflect use of analytical methods for identifying contamination and remediating contamination consistent with the levels for remedial action objectives identified in the NCP. In addition, the RI/FS QAPP shall address sampling procedures, sample custody, analytical procedures, data reduction, data validation, data reporting, and personnel qualifications. The Respondents shall refer to EPA's guidance document titled "EPA QA/R-5" (EPA 2001) which describes the RI/FS QAPP format and the required content.

Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall prepare and submit to the EPA a final RI/FS SAP within thirty (30) calendar days after completing discussion of the EPA's comments on the draft RI/FS SAP Work Plan (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the draft SAP Work Plan).

28. The Respondents shall demonstrate in advance, to the EPA's satisfaction, that each analytical laboratory it may use is qualified to conduct the proposed Work. This includes use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and the DQOs approved in the RI/FS QAPP for the Site by the EPA. The laboratory must have, and follow, an approved QA program. If a laboratory not in the Contract Laboratory Program (CLP) is selected, methods consistent with CLP methods shall be used where appropriate. Any methods not consistent with CLP methods shall be approved by EPA prior to their use. Furthermore, if a laboratory not in the CLP program is selected, a laboratory QA program must be submitted to the EPA for review and approval. The EPA may require the Respondents to submit detailed information to demonstrate that the laboratory is qualified to conduct the Work, including information on personnel and qualifications, equipment, and material specifications.

Task 4: RI/FS Site Health and Safety Plan

29. The Respondents shall prepare and submit to the EPA an RI/FS Site Health and Safety Plan (HSP) within sixty (60) calendar days after the Scoping Phase Meeting. A HSP that is in compliance with applicable Occupational Safety and Health Administration and EPA requirements must be in place prior to any onsite activities. The EPA will review, but not approve, the RI/FS Site HSP to ensure that all necessary elements are included and that the Plan provides for the protection of human health and the environment. In addition, EPA may require a revised RI/FS Site HSP to be submitted for review in the event that the RI/FS WP is changed or amended (e.g., such as in the performance of pilot studies which may result in the airborne emissions of hazardous substances from the Site). The Respondents shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) which describes the RI/FS Site HSP suggested format and content.

Task 5: Community Relations Plan

30. The development and implementation of community relations activities, including conducting community interviews and developing a community relations plan, are the responsibilities of EPA. Respondents must assist, as required by EPA, by providing information regarding the Site's history, participating in public meetings upon notice from EPA, or by preparing fact sheets for distribution to the general public. As appropriate and feasible, EPA will provide Respondents with the opportunity to review and provide comments on a draft community relations plan, including the stakeholder and community mailing lists, and fact sheets prior to distribution. In addition, EPA may require that Respondents establish a community information repository, at or near the Site, to house one copy of the administrative record. The extent of Respondents' involvement in community relations activities is left to the discretion of EPA. Respondents' community relations responsibilities, if any, are specified in the community relations plan. All community relations activities will be subject to oversight by EPA.

Task 6: Site Characterization

31. As part of the Remedial Investigation (RI), the Respondents shall perform the activities described in this Task, including the preparation of a RI Report (Task 9, Remedial Investigation Report). The overall objective of the Site's characterization will be to describe areas of the Site that may pose a threat to human health or the environment. This will be accomplished by first determining the Site's physiography, geology, and hydrology. Surface and subsurface pathways of migration shall be defined by the Respondents. The Respondents shall identify the sources of contamination and define the nature, extent, and volume of the sources of contamination at the Site, including their physical and chemical constituents, as necessary to identify principal threat or low threat wastes, and estimate waste volumes for risk assessment evaluation and remedial alternatives evaluation purposes. The Respondents shall also investigate the extent of migration of this contamination as well as its volume and any changes in its physical or chemical characteristics, to provide for a comprehensive understanding of the nature and extent of contamination at the Site. Using this information, contaminant fate and transport will then be determined and projected.

32. The Respondents shall implement the Final RI/FS WP, and SAP during this phase of the RI/FS. Field data will be collected and analyzed to provide the information required to accomplish the objectives of the study. The Respondents shall notify the EPA at least fifteen (15) calendar days in advance of the field work regarding the planned dates for field activities, potentially including, but not limited to, ecological field surveys, field layout of the sampling locations, installation of wells, initiating sampling (air, ground water, sediments, soils, and if EPA determines it necessary, biota), installation and calibration of equipment, aquifer tests, and initiation of analysis and other field investigation activities (potentially including geophysical surveys and borehole geophysics). Respondents shall not proceed with field activities without prior EPA approval. The Respondents shall demonstrate that the laboratory and type of laboratory analyses that will be utilized during the Site's characterization meets the specific QA/QC requirements and the DQOs of the investigation of the Site as specified in the Final RI/FS SAP. Activities are often iterative, and to satisfy the objectives of the RI/FS, it may be necessary for the Respondents to supplement the Work specified in the Final RI/FS WP.

33. The Respondents shall perform the following activities as part of Task 6 (Site Characterization):

a) Field Investigation - The field investigation shall include the gathering of data to define the Site's physical and biological characteristics, sources of contamination (as necessary to identify principal threat or low threat wastes, and estimate waste volumes for risk assessment evaluation and remedial alternatives evaluation purposes), and the nature

and extent of contamination at the Site. These activities shall be performed by the Respondents in accordance with the Final RI/FS WP and SAP. At a minimum, this field investigation shall address the following:

i) Implementation and Documentation of Field Support Activities - The Respondents shall initiate field support activities following the Final RI/FS WP and SAP approved by the EPA. Field support activities may include obtaining access to the Site; scheduling; and procurement of equipment, office space, laboratory services, and/or contractors. The Respondents shall notify the EPA at least fifteen (15) calendar days prior to initiating field support activities so that the EPA may adequately schedule oversight activities. Respondents shall not proceed with field activities without prior EPA approval. The Respondents shall also notify the EPA in writing upon completion of field support activities.

ii) Investigation and Definition of Site Physical and Biological Characteristics - The Respondents shall collect data on the physical and biological characteristics of the Site and its surrounding areas including the physiography, geology, hydrology, and specific physical characteristics identified in the Final RI/FS WP. This information shall be ascertained through a combination of physical measurements, observations, and sampling efforts, and will be utilized to define potential transport pathways and human and ecological receptor populations (including risks to endangered or threatened species). In defining the Site's physical characteristics, the Respondents shall also obtain sufficient engineering data for the projection of contaminant fate and transport and development and screening of remedial action alternatives, including information to assess treatment technologies.

iii) Definition of Sources of Contamination - The Respondents shall locate each source of contamination and determine the areal extent and depth of contamination, as necessary to identify principal threat or low threat wastes, and estimate waste volumes for risk assessment evaluation and remedial alternatives evaluation purposes. The physical characteristics and chemical constituents and their concentrations will be determined for all known and discovered sources of contamination as needed for the purposes described above. The Respondents shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the Final RI/FS QAPP and DQOs. Defining the source of contamination shall include analyzing the potential for contaminant release (e.g., long-term leaching from soil), contaminant mobility and persistence, and characteristics as necessary for evaluating remedial actions, including information to assess treatment technologies.

iv) Description of the Nature and Extent of Contamination - The Respondents shall gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the Respondents shall utilize the information on the Site's physical and biological characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The Respondents shall then implement an iterative monitoring program and any study program identified in the Final RI/FS WP or SAP such that by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at the Site can be determined. In addition, the Respondents shall gather data for calculations of contaminant fate and transport. This process shall be continued until the area and depth of contamination are known to the level of contamination established in the Final RI/FS QAPP and DQOs. The EPA will use the information on the nature and extent of contamination to determine the level of risk presented by the Site and to help determine aspects of the appropriate remedial action alternatives to be evaluated.

b) Data Analyses - The Respondents shall analyze the data collected and develop or refine the Conceptual Site Model by presenting and analyzing data on source characteristics, the nature and extent of contamination, the transport pathways and fate of the contaminants present at the Site, and the effects on human health and the environment.

i) Evaluation of Site Characteristics - The Respondents shall analyze and evaluate the data to describe the Site's physical and biological characteristics, contaminant source characteristics (as necessary to identify principal threat or low threat wastes, and estimate waste volumes for risk assessment evaluation and remedial alternatives evaluation purposes), nature and extent of contamination, and contaminant fate and transport. Results of the Site's physical characteristics, source characteristics, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. The evaluation will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as the mobility and persistence of the contaminants. Where modeling is appropriate, such models shall be identified by the Respondents to the EPA in a Technical Memorandum on Modeling of Site Characteristics prior to their use. If EPA disapproves of or requires revisions to the technical memorandum, in whole or in part, subject to the provisions in Section X of the Settlement Agreement, Respondents shall amend and submit to EPA a revised technical memorandum on modeling which is responsive to directions and EPA's comments within thirty (30) calendar days after completing discussion of the EPA's comments on the draft technical memorandum (and in no

event later than sixty (60) calendar days after receipt of the EPA's comments on the draft memorandum).

All data and programming, including any proprietary programs, shall be made available to the EPA. The RI data shall be presented in a format to facilitate the Respondents' preparation of the Human Health and Ecological Risk Assessments (Task 7, Risk Assessments). All data shall be archived in a database in such a format that would be accessible to investigators as needed.

The Respondents shall agree to discuss and then collect any data gaps identified by the EPA that are needed to complete the risk assessments. Also, this evaluation shall provide any information relevant to the Site's characteristics necessary for evaluation of the need for remedial action in the risk assessments and for the development and evaluation of remedial alternatives. Analyses of data collected for the Site's characterization shall meet the DQOs developed in the Final RI/FS QAPP and stated in the Final RI/FS SAP (or revised during the RI).

c) Data Management Procedures - The Respondents shall consistently document the quality and validity of field and laboratory data compiled during the RI as follows:

i) Documentation of Field Activities - Information gathered during the Site's characterization shall be consistently documented and adequately recorded by the Respondents in well maintained field logs and laboratory reports. The method(s) of documentation shall be specified in the Final RI/FS WP and/or the SAP. Field logs shall be utilized to document observations, measurements, and significant events that have occurred during field activities. Laboratory reports shall document sample custody, analytical responsibility and results, adherence to prescribed protocols, nonconformity events, corrective measures, and data deficiencies.

ii) Sample Management and Tracking - The Respondents shall maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the risk assessments and the development and evaluation of remedial alternatives. Chemical analytical results developed under the Final RI/FS WP shall not be included in any characterization reports of the Site unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the Respondents shall establish a data security system to safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation.

34. Reuse Assessment. If EPA, in its sole discretion, determines that a Reuse Assessment is necessary, Respondents will perform the Reuse Assessment in accordance with the SOW, RI/FS

Work Plan and applicable guidance. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the Site.

Task 7: Risk Assessments

35. The Respondents shall perform a Baseline Human Health Risk Assessment, and an Ecological Risk Assessment for the Site, which will be a part of the RI Report. The Respondents will prepare one section of the Final RI/FS WP (Task 2) which discusses the risk assessment process and outlines the steps necessary for coordinating with the EPA at key decision points within the process. Submittal of deliverables, meetings and/or conference calls, and presentations to the EPA will be reflected in the project schedule in the Final RI/FS WP to demonstrate the progress made on the risk assessments. The DQOs listed within the Final RI/FS QAPP will include DQOs specific to risk assessment needs, and critical samples needed for the risk assessments will be so identified within the Final RI/FS SAP. The Respondents shall develop an initial Conceptual Site Model which may be revised as new information is obtained. These risk assessments shall consist of both Human Health and Ecological Risk Assessments as follows:

a) Baseline Human Health Risk Assessment - The Respondents shall perform a Baseline Human Health Risk Assessment (BHHRA) to evaluate and assess the risk to human health posed by the contaminants present at the Site. The Respondents shall refer to the appropriate EPA guidance documents (EPA 1989b, 1991a, 1991b, 1991c, 1992a, and 1998a) in conducting the BHHRA. The Respondents shall address the following in the BHHRA:

i) Hazard Identification (sources)/Dose-Response Assessment - The Respondents shall review available information on the hazardous substances present at the Site and identify the major contaminants of concern. The Respondents, with concurrence from the EPA, shall select contaminants of concern based on their intrinsic toxicological properties.

ii) Conceptual Exposure/Pathway Analysis - The Respondents shall identify and analyze critical exposure pathways (e.g., drinking water). The proximity of contaminants to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed.

iii) Characterization of Site and Potential Receptors - The Respondents shall identify and characterize human populations in the exposure pathways.

iv) Exposure Assessment - During the exposure assessment, the Respondents shall identify the magnitude of actual or potential human exposures, the frequency

and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondents shall develop reasonable maximum estimates of exposure for both current land use conditions and potential future land use conditions at the Site.

v) Risk Characterization - During risk characterization, the Respondents shall compare chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near the Site are affecting or could potentially affect human health.

For chemicals lacking an EPA toxicity value, EPA and the Respondents will work together to identify an appropriate surrogate toxicity factor.

vi) Identification of Limitations/Uncertainties - The Respondents shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the BHHRA.

vii) Conceptual Site Model - Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, the Respondents shall develop a Conceptual Site Model for the Site.

The Respondents shall prepare and submit to the EPA for review and approval, according to the schedule specified in the Final RI/FS Work Plan, a Draft BHHRA. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a final BHHRA within thirty (30) calendar days after completing discussion of the EPA's comments on the Draft BHHRA (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the Draft BHHRA).

b) The Baseline Ecological Risk Assessment (BERA) shall be performed concurrently with the BHHRA. The BERA shall conform to current EPA guidance, including but not limited to EPA 1989b, EPA 1992a, EPA 1992b, and EPA 1993. The scoping of all phases of the BERA shall follow the general approach provided in EPA 1992b and shall include discussions between the Respondents' and the EPA's risk assessors and risk managers. The BERA shall conform to the general outline provided in EPA 1997.

The eight steps in the Baseline Ecological Risk Assessment (BERA) process include: Step 1 - Screening-Level Problem Formulation and Ecological Effects Evaluation, Step 2

- Screening-Level Preliminary Exposure Estimate and Risk Calculation, Step 3 - Baseline Risk Assessment Problem Formulation, Step 4 - Study Design and Data Quality Objectives, Step 5 - Field Verification and Sampling Design, Step 6 - Site Investigation and Analysis of Exposure and Effects, Step 7 - Risk Characterization, and Step 8 - Risk Management. The Respondents shall perform the BERA in accordance with the appropriate EPA's guidance documents (EPA 1992a, 1997, and 1998a). The Respondents shall interact closely with the EPA's Remedial Project Manager and risk assessment staff assigned to the Site to ensure that draft deliverables are acceptable and major rework is avoided on subsequent submittals. The scope of the BERA will be determined via a phased approach as outlined in the EPA's guidance documents and documented in the following deliverables:

i) Step 1, Screening Level Problem Formulation and Ecological Effects Evaluation - The "Screening Level Problem Formulation and Ecological Effects Evaluation" step is part of the initial ecological risk screening assessment. For this initial step, it is likely that site-specific information for determining the nature and extent of contamination and for characterizing ecological receptors at the Site is limited. This step includes all the functions of problem formulation (Steps 3 and 4) and ecological effects analysis, but on a screening level. The results of this step will be used in conjunction with exposure estimates during the preliminary risk calculation in Step 2 (Screening-Level Preliminary Exposure Estimate and Risk Calculation).

For the screening level problem formulation, the Respondents shall develop a Conceptual Site Model that addresses these five issues: 1) environmental setting and contaminants known or suspected to exist at the Site, 2) contaminant fate and transport mechanisms that might exist at the Site, 3) the mechanisms of ecotoxicity associated with contaminants and likely categories of receptors that could be affected, 4) the complete exposure pathways that might exist at the Site, and 5) selection of endpoints to screen for ecological risk.

The next step in the initial ecological risk screening assessment will be the preliminary ecological effects evaluation and the establishment of contaminant exposure levels that represent conservative thresholds for adverse ecological effects. Screening ecotoxicity values shall represent a no-observed-adverse-effect-level for long-term exposures to a contaminant. Ecological effects of most concern are those that can impact populations (or higher levels of biological organizations) and include adverse effects on development, reproduction, and survivorship. For some of the data reported in the literature, conversions may be necessary to allow the data to be used for measures of exposure other than those reported. The Respondents shall consult with the EPA's Remedial Project

Manager and risk assessors concerning any extrapolations used in developing screening ecotoxicity values.

ii) Step 2, Screening-Level Exposure Estimate and Risk Calculation - The "Screening-Level Exposure Estimate and Risk Calculation" comprises the second step in the ecological risk screening assessment for the Site. Risk is estimated by comparing maximum documented exposure concentrations with the ecotoxicity screening values from Step 1. At the conclusion of Step 2, the Respondents shall decide, with concurrence from the EPA, that either the screening-level ecological risk assessment is adequate to determine that ecological threats are negligible, or the information available is adequate to support a risk management decision, such as continuing to a more detailed ecological risk assessment (Steps 3 through 7) or taking action to eliminate the identified exposure pathway. If the process continues, the screening-level assessment serves to identify exposure pathways and preliminary contaminants of concern for the BERA by eliminating those contaminants and exposure pathways that pose negligible risks.

To estimate exposures for the screening-level ecological risk calculation, on-site contaminant levels and general information on the types of biological receptors that might be exposed should be known from Step 1. Only complete exposure pathways should be evaluated and the highest measured or estimated on-site contaminant concentration for each environmental medium should be used to estimate exposures, thereby ensuring that potential ecological threats are not missed.

The Respondents will estimate a quantitative screening-level risk using the exposure estimates developed according to Step 2 and the screening ecotoxicity values developed according to Step 1. For the screening-level risk calculation, the hazard quotient approach, which compares point estimates of screening ecotoxicity values and exposure values, is adequate to estimate risk.

At the end of Step 2, the Respondents shall decide, with concurrence from the EPA, whether the information available is adequate to support a risk management decision. The four possible decisions at this point will be: 1) There is adequate information to conclude that ecological risks are negligible and therefore no need for remediation on the basis of ecological risk; 2) The information is not adequate to make a decision at this point, and the ecological risk assessment process will continue to Step 3; 3) The information indicates a potential for adverse ecological effects, and a more thorough assessment is warranted; or 4) There is adequate information to support a risk management decision such as taking action to eliminate an identified exposure pathway. The Respondents shall document the decision and the basis for it in a Draft Screening Level Ecological Risk

Assessment (SLERA) Report and submit it to the EPA for review and approval according to the project schedule in the Final RI/FS WP. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a final SLERA Report within thirty (30) calendar days after completing discussion of the EPA's comments on the draft SLERA Report (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the draft SLERA Report).

iii) Step 3, Baseline Risk Assessment Problem Formulation - The "Baseline Risk Assessment Problem Formulation" step of the BERA will refine the screening-level problem formulation and expands on the ecological issues that are of concern at the Site. In the screening-level assessment, conservative assumptions are used where site-specific information is lacking. In Step 3, the results of the screening assessment and additional site-specific information are used to determine the scope and goals of the BERA. Steps 3 through 7 will be required only if the screening-level assessment, in Steps 1 and 2, indicated a need for further ecological risk evaluation.

Problem formulation at Step 3 will include the following activities: a) refining preliminary contaminants of ecological concern; b) further characterizing ecological effects of contaminants; c) reviewing and refining information on contaminant fate and transport, complete exposure pathways, and ecosystems potentially at risk; d) selecting assessment endpoints; and e) developing a Conceptual Site Model (CSM) with working hypotheses or questions that the Site investigation will address.

At the conclusion of Step 3, the Respondents shall submit a Draft BERA Problem Formulation (PF) Report to the EPA for review and approval according to the project schedule in the Final RI/FS Work Plan. Subject to the provisions in Section X of the Settlement Agreement; the Respondents shall submit a final BERA PF Report within thirty (30) calendar days after completing discussion of the EPA's comments on the Draft BERA Problem Formulation Report (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the Draft BERA Problem Formulation Report). This report shall discuss the assessment endpoints, exposure pathways, risk questions, and the CSM integrating these components. The products of Step 3 will be used to select measurement endpoints and to develop the BERA Work Plan (WP) and Sampling and Analysis (SAP) for the Site in Step 4.

iv) Step 4, Study Design and Data Quality Objective Process - The "Study Design and Data Quality Objective Process" step of the BERA will establish the measurement endpoints which complete the CSM in Step 3. The CSM will then

be used to develop the study design and DQOs. The deliverables of Step 4 will be the BERA WP and SAP, which describe the details of the Site's investigation as well as the data analysis methods and DQOs. The Draft BERA WP shall describe the assessment endpoints, exposure pathways, questions and testable hypotheses, measurement endpoints and their relation to assessment endpoints, and uncertainties and assumptions. The Draft BERA SAP shall describe data needs; scientifically valid and sufficient study design and data analysis procedures; study methodology and protocols, including sampling techniques; data reduction and interpretation techniques, including statistical analyses; and quality assurance procedures and quality control techniques. The Respondents shall submit to the EPA for review and approval a Draft BERA WP and SAP according to the schedule specified in the Final RI/FS Work Plan. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a final BERA WP and SAP within thirty (30) calendar days after completing discussion of the EPA's comments on the Draft BERA WP and SAP (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the Draft BERA WP and SAP).

v) Step 5, Field Verification of Sampling Design - The "Field Verification of Sampling Design" step of the BERA process will ensure that the DQOs for the Site can be met. This step verifies that the selected assessment endpoints, testable hypotheses, exposure pathway model, measurement endpoints, and study design from Steps 3 and 4 are appropriate and implementable at the Site. Step 6 of the BERA process cannot begin until the Final BERA WP and SAP are approved by the EPA.

vi) Step 6, Site Investigation and Analysis Phase - The "Site Investigation and Analysis Phase" of the BERA process shall follow the Final BERA WP and SAP developed in Step 4 and verified in Step 5. The Step 6 results are then used to characterize ecological risks in Step 7.

The Final BERA WP for the site investigation will be based on the CSM and will specify the assessment endpoints, risk questions, and testable hypotheses. During the site investigation, the Respondents shall adhere to the DQOs and to any requirements for co-located sampling. The analysis phase of the BERA process will consist of the technical evaluation of data on existing and potential exposures and ecological effects at the Site. This analysis will be based on the information collected during Steps 1 through 5 and will include additional assumptions or models to interpret the data in the context of the CSM. Changing field conditions and new information on the nature and extent of contamination may require a change to the Final BERA SAP.

vii) Step 7 - Risk Characterization - The "Risk Characterization" step is considered the final phase of the BERA process and will include two major components: risk estimation and risk description. Risk estimation will consist of integrating the exposure profiles with the exposure-effects information and summarizing the associated uncertainties. The risk description will provide information important for interpreting the risk results and will identify a threshold for adverse effects on the assessment endpoints. At the end of Step 7, the Respondent shall submit a Draft BERA Report to EPA for review and approval according to the project schedule in the Final RI/FS WP. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a final BERA Report within thirty (30) calendar days after completing discussion of EPA's comments on the Draft BERA Report (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the Draft BERA Report). viii) Step 8 - Risk Management - "Risk Management" at the Site will be the responsibility of the EPA's Remedial Project Manager, who must balance risk reductions associated with cleanup of contaminants with potential impacts of the remedial actions themselves. In Step 7, a threshold for effects on the assessment endpoint as a range between contamination levels identified as posing no ecological risk and the lowest contamination levels identified as likely to produce adverse ecological effects will be identified. In Step 8, the EPA's Remedial Project Manager will evaluate several factors in deciding whether or not to clean up to within that range. This risk management decision will be finalized by the EPA in the Record of Decision for the Site.

Task 8: Treatability Studies

36. If determined necessary by EPA, treatability testing shall be performed by Respondents to assist in the detailed analysis of alternatives. In addition, if EPA determines that treatability testing is necessary, the following activities shall be performed by the Respondents:

a) Determination of Candidate Technologies and of the Need for Testing - The Respondents shall identify candidate technologies for a treatability studies program.

The listing of candidate technologies will cover the range of technologies required for alternatives analysis. The specific data requirements for the testing program will be determined and refined during the characterization of the Site and the development and screening of remedial alternatives. If the EPA determines treatability testing is necessary, Respondents shall perform the following activities:

i) Conduct a Literature Survey and Determination of the Need for Treatability Testing - The Respondents may conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and

maintenance requirements, and implementability of candidate technologies. If practical technologies have not been sufficiently demonstrated or cannot be adequately evaluated for this Site on the basis of available information, treatability testing may need to be conducted. Where it is determined by EPA that treatability testing is necessary, the Respondents shall submit a Treatability Study Work Plan to the EPA outlining the steps and data necessary to evaluate and initiate the treatability testing program.

ii) Evaluation of Treatability Studies - Once a decision has been made by EPA that treatability studies are necessary, the Respondents and the EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as perform testing for various operating conditions, the decision to perform pilot testing shall be made as early in the process as possible to minimize potential delays of the Feasibility Study (Task 10). If the EPA determines that treatability studies are necessary, Respondents shall submit a Draft Treatability Study Work Plan (TSWP), which includes a Sampling and Analysis Plan (SAP) and Health and Safety Plan, within sixty (60) calendar days after the determination that treatability studies are necessary. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a final TSWP within thirty (30) calendar days after completing discussion of the EPA's comments on the Draft TSWP (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the Draft TSWP). The EPA will not approve the health and safety plan but may provide comments to the Respondents. The Respondents shall submit a Draft Treatability Study (TS) Report to the EPA for review and approval according to the project schedule in the Final Treatability Study Work Plan. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a final TS Report within thirty (30) calendar days after completing discussion of the EPA's comments on the Draft TS Report (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the Draft TS Report). This Report shall evaluate the technology's effectiveness and implementability in relation to the Preliminary Remediation Goals established for the Site. Actual results must be compared with predicted results to justify effectiveness and implementability discussions.

Task 9: Remedial Investigation Report

37. The Respondents shall prepare and submit a Remedial Investigation (RI) Report. The Respondents shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) and follow, as appropriate, Table 3-13 (Suggested RI Report Format) for the RI Report format and content. The information shall include a summary of the results of the field activities to

characterize the Site, classification of ground water beneath the Site, nature and extent of contamination, and appropriate site-specific discussions for fate and transport of contaminants. The Respondents shall incorporate the results of Task 7 (Risk Assessments) into the RI Report. The Respondents shall submit a Draft RI Report to the EPA for review and approval according to the project schedule in the Final RI/FS Work Plan. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a final RI Report within thirty (30) calendar days after completing discussion of the EPA's comments on the Draft RI Report (and in no event later than sixty (60) calendar days after receipt of the EPA's comments on the Draft RI Report).

Task 10: Feasibility Study

38. The Respondents shall perform a Feasibility Study (FS) as specified in this SOW. The FS shall include, but not be limited to, the development and screening of alternatives for remedial action, a detailed analysis of alternatives for remedial action, and submittal of Draft and Final FS Reports as follows:

a) Development and Screening of Alternatives for Remedial Action - The Respondents shall develop an appropriate range of remedial alternatives that will be evaluated through development and screening.

b) Detailed Analyses of Alternatives for Remedial Action - The Respondents shall conduct a detailed analysis of remedial alternatives for the candidate remedies identified during the screening process described in this Task. This detailed analysis shall follow the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b) and other appropriate guidance documents. The major components of the detailed analysis of alternatives for remedial action shall consist of an analysis of each option against a set of evaluation criteria and a separate discussion for the comparative analysis of all options with respect to each other in a manner consistent with the NCP. The Respondents shall not consider state and community acceptance during the detailed analysis of alternatives. The EPA will perform the analysis of these two criteria. At the conclusion of the detailed analysis of alternatives and within the time frame specified in the project schedule in the Final RI/FS WP, the Respondents shall provide the EPA with a Draft FS Report as outlined below.

Draft Feasibility Study Report - The Respondents shall submit to the EPA, for review and approval, a Draft FS Report which documents the activities conducted during the development and screening of alternatives and the detailed analyses of alternatives, as described above, according to the project schedule in the Final RI/FS WP. The Respondents shall refer to the EPA's guidance document titled "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA

1988b), specifically Table 6-5 (Suggested FS Report Format) for the suggested FS Report content and format.

c) Final Feasibility Study Report - The Draft FS Report shall provide the basis for the Proposed Plan developed by the EPA under CERCLA and shall document the development and analysis of remedial alternatives. The Draft FS Report may be subject to change following comments received during the public comment period on the EPA's Proposed Plan. The EPA will forward any comments pertinent to the content of the Draft FS Report to the Respondents. Subject to the provisions in Section X of the Settlement Agreement, the Respondents shall submit a Final FS Report within thirty (30) calendar days after completing discussion of the EPA's comments (and any public comments provided by EPA) on the Draft FS Report (and in no event later than sixty (60) calendar days after receipt of comments from EPA on the Draft FS Report).

APPENDIX A
SCHEDULE OF DELIVERABLES/MEETINGS
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE

DELIVERABLES/MEETINGS	DUE DATES (CALENDAR DAYS)
1. Scoping Phase Meeting	Meeting to occur within fourteen (14) days after the Effective Date of the Settlement Agreement.
2. RI/FS Site Health and Safety Plan	Plan due within sixty (60) days after the Scoping Phase Meeting. Plan must be in place prior to any onsite activities.
3. Draft and Final RI/FS Work Plan	Draft due within sixty (60) days after the Scoping Phase Meeting. Final due within thirty (30) days after completing discussion of the EPA's comments on the Draft RI/FS Work Plan (and in no event later than sixty (60) days after receipt of the EPA's comments on the Draft RI/FS Work Plan).
4. Draft and Final RI/FS Sampling and Analysis Plan	Draft due within sixty (60) days after the Scoping Phase Meeting. Final due within thirty (30) days after completing discussion of the EPA's comments on the Draft RI/FS SAP (and in no event later than sixty (60) days after receipt of the EPA's comments on the Draft RI/FS SAP).
5. Draft and Final Technical Memorandum on Modeling of Site Characteristics.	Draft due when Respondents propose that modeling is appropriate. Final due within thirty (30) days after completing discussion of the EPA's comments on the draft memorandum (and in no event later than sixty (60) days after receipt of the EPA's comments on the draft memorandum).

6. Draft and Final Baseline Human Health Risk Assessment	Draft due as specified in the Final RI/FS Work Plan. Final due within thirty (30) days after completing discussion of the EPA's comments on the Draft BHHRA (and in no event later than sixty (60) days after receipt of the EPA's comments on the Draft BHHRA).
7. Draft and Final Screening-Level Ecological Risk Assessment Report	Draft due as specified in the Final RI/FS Work Plan. Final due within thirty (30) days after completing discussion of the EPA's comments on the Draft SLERA Report (and in no event later than sixty (60) days after receipt of the EPA's comments on the Draft SLERA Report).
8. Draft and Final Treatability Study Work Plan	Draft due within sixty (60) days of determination by EPA that treatability studies are necessary. Final due within thirty (30) days after completing discussion of the EPA's comments on the Draft TSWP (and in no event later than sixty (60) days after receipt of the EPA's comments on the Draft TSWP).
9. Draft and Final Treatability Study Report	Draft due as specified in the Final Treatability Study Work Plan. Final due within thirty (30) days after completing discussion of the EPA's comments on the Draft TS Report (and in no event later than sixty (60) days after receipt of the EPA's comments on the Draft TS Report).
10. Draft and Final Remedial Investigation Report	Draft due as specified in the Final RI/FS Work Plan. Final due within thirty (30) days after completing discussion of the EPA's comments on the Draft RI Report (and in no event later than sixty (60) days after receipt of the EPA's comments on the Draft RI Report).

11. Draft and Final Feasibility Study Report	Draft due as specified in the Final RI/FS Work Plan. Final due within thirty (30) days after completing discussion of the EPA's comments (and any public comments provided by EPA) on the Draft FS Report (and in no event later than sixty (60) days after receipt of comments from EPA on the Draft FS Report).
12. Bi-Monthly Progress Reports	Initially due as specified in the Final RI/FS Work Plan. Thereafter, due by the tenth day of every other following month.

APPENDIX B
GUIDANCE DOCUMENTS
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE

The following list comprises some of the guidance documents that are applicable to the Remedial Investigation/Feasibility Study process. The Respondents should consult with EPA's Remedial Project Manager for additional guidance and to ensure that the following guidance documents have not been superseded:

U.S. Environmental Protection Agency (EPA) 1987a. "Data Quality Objectives for Remedial Response Activities." Office of Emergency and Remedial Response and Office of Waste Programs Enforcement. EPA/540/G-87/003. OSWER Directive No. 9335.0-7b. March 1987.

EPA 1987b. "Interim Guidance on Compliance with Applicable or Relevant and Appropriate Requirements." Office of Emergency and Remedial Response. OSWER Directive No. 9234.0-05. July 9, 1987.

EPA 1988a. "CERCLA Compliance with Other Laws Manual." Office of Emergency and Remedial Response. OSWER Directive No. 9234.1-01. August 1988.

EPA 1988b. "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA." Office of Emergency and Remedial Response. EPA/540/G-89/004. OSWER Directive No. 9355.3-01. October 1988.

EPA 1989a. "CERCLA Compliance with Other Laws Manual: Part II. Clean Air Act and Other Environmental Statutes and State Requirements." Office of Emergency and Remedial Response. OSWER Directive No. 9234.1-02. August 1989.

EPA 1989b. "Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)." Office of Emergency and Remedial Response. EPA/540/1-89/002. OSWER Directive No. 9285.7-01A. December 1989.

EPA 1991a. "Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors." Office of Emergency and Remedial Response. OSWER Directive No. 9235.6-03. March 1991.

EPA 1991b. "Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part B), Development of Risk-Based Preliminary Remediating Goals." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-01B. December 1991.

EPA 1991c. "Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual (Part C), Risk Evaluation of Remedial Alternatives." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-01C. 1991.

EPA 1992a. "Guidance for Data Useability in Risk Assessment." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-09A. April 1992 (and Memorandum from Henry L. Longest dated June 2, 1992).

EPA 1992b. "Supplemental Guidance to RAGS: Calculating the Concentration Term." Office of Emergency and Remedial Response. OSWER Directive No. 9285.7-081. May 1992.

EPA 1993. "Data Quality Objectives Process for Superfund." Office of Solid Waste and Emergency Response. EPA/540-R-93-071. September 1993.

EPA 1997. "Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments." Office of Emergency and Remedial Response. EPA/540-R-97-006. June 5, 1997.

EPA 1998a. "Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments). Interim. Process for Designing and Conducting Ecological Risk Assessments." Office of Solid Waste and Emergency Response. EPA/540-R-97-033. January 1998.

EPA 1998b. "EPA Guidance for Quality Assurance Project Plans." Office of Research and Development. EPA QA/G-5. EPA/600/R-98/018. February 1998.

EPA 2001. "EPA Requirements for Quality Assurance Project Plans." Office of Environmental Information. EPA QA/R-5. EPA/240/B-01/003. March 2001.

APPENDIX C
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE

A preliminary list of probable Applicable or Relevant and Appropriate Requirements (ARARs) will be generated by the Respondents during the Remedial Investigation and Feasibility Study process. This list will be compiled according to established EPA guidance, research of existing regulations, and collection of site-specific information and data. Three types of ARARs will be identified:

1) Chemical-Specific ARARs: These ARARs are usually health- or risk-based numerical values or methodologies used to determine acceptable concentrations of chemicals that may be found in or discharged to the environment (e.g., maximum contaminant levels that establish safe levels in drinking water).

2) Location-Specific ARARs: These ARARs restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of areas regulated under various Federal laws include floodplains, wetlands, and locations where endangered species or historically significant cultural resources are present.

3) Action-Specific ARARs: These ARARs are usually technology- or activity-based requirements or limitations on actions or conditions involving specific substances.

Chemical- and location-specific ARARs are identified early in the process, generally during the site investigation, while action-specific ARARs are usually identified during the Feasibility Study in the detailed analysis of alternatives.

APPENDIX C
SITE MAP

APPENDIX C

R&H Oil / Tropicana Energy

TXD057577579

02/01/2007 aerial from GlobeXplorer ImageConnect
Acreage listed for the site was calculated for the polygon shown above and rounded to the nearest whole number. It may not reflect actual acreage of the site and is given for informational purposes only

Property line is an approximate boundary since it is not a surveyed figure.

0 100 200 400 600
Feet

0 0.02 0.04 0.08 0.12
Miles

EPA Region 6
Superfund
05/21/2008

20080521MLO2

N

APPENDIX D
TECHNICAL SCOPE OF WORK
STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
R&H OIL/TROPICANA ENERGY SITE

APPENDIX D

TECHNICAL SCOPE OF WORK

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

R&H OIL/TROPICANA ENERGY SITE

INTRODUCTION

This appendix to the Statement of Work provides the preliminary scope of work for the Remedial Investigation/Feasibility Study (RI/FS) at the R&H Oil/Tropicana Energy site (the Site). The objective of the scope of work is to define the nature and extent of contamination resulting from Site operations and to obtain information necessary to fill data gaps in the Conceptual Site Model for the Site and allow the development and evaluation of remedial action alternatives in the FS. The scope of work herein is subject to the modification procedures in the Administrative Settlement Agreement and Order on Consent. The specific activities and procedures for implementing this RI/FS will be more particularly described in the work plans described in the Statement of Work.

As described below, this scope of work is based upon the following analyses:

(1) Development of a preliminary conceptual model for the Site, highlighting those potential exposure pathways and receptors for which additional data are needed to evaluate the completeness of a potential pathway and/or the significance of those pathways that are initially characterized as complete in support of the risk assessment.

(2) Identification of the data needed to complete the evaluation of potentially complete or potentially significant pathways in the preliminary conceptual site model, and facilitate evaluation of potential remedial action alternatives in the FS.

(3) Design of an RI site characterization program that provides the needed data, including identification of media to be sampled, sample locations and associated analytical parameters.

PRELIMINARY CONCEPTUAL SITE MODEL

The Preliminary Conceptual Site Model (PCSM) presents the current understanding of the type and occurrence of potential contaminant sources and possible exposure pathways associated with the Site. Consistent with EPA RI/FS Guidance (EPA, 1988), the PCSM was developed on the basis of existing Site data. The hypotheses presented in the PCSM will be tested, refined, and modified as necessary based on data obtained from the passive soil gas investigation performed at the Site by EPA and as data are collected during the RI. The following subsections discuss Site conditions and available information that are important to understanding the overall PCSM and remaining data needs.

Current Land Use - Currently the Site is vacant property; however, the prior land use was industrial and the Site is zoned as heavy industrial. Land use north and west of the Site is primarily commercial/industrial, including the former East Kelly Air Force Base to the west, and multiple light industrial, auto repair and service station facilities to the northeast and southwest. Commercial properties are located east of the Site across Somerset Road, with residential areas farther to the east and south. The PCSM is based on the premise that land use at the Site will remain commercial/industrial.

Since completion of removal actions at the Site, some areas of the Site had become overgrown with weeds, scrub brush and small trees, creating an eyesore in the community. To facilitate the Site investigation and eliminate this community eyesore, some of the Respondents hired a clearing contractor who removed this overgrowth and mowed the Site in the fall of 2007 and

continues to maintain the Site fence and perform maintenance mowing.

Hydrogeology – As indicated on a regional geologic map of the Site vicinity (Barnes, 1983), fluviatile terrace deposits are present at the Site surface. Previous investigations have characterized these deposits as a fining upward sequence with a gravelly sand/sand basal zone at about 19 to 22 feet below grade. This zone is saturated and is considered the uppermost water-bearing unit at the Site. The apparent direction of groundwater flow in this unit is toward the east-southeast at an approximate gradient of 0.001. The underlying confining strata for the uppermost water-bearing unit are the stiff clays of the upper weathered portion of the Navarro Shale. The Navarro Shale and other Upper Cretaceous unit clays serve as a regional aquitard separating the terrace deposit from the deeper Edwards Aquifer. In the Site vicinity, the top of the Edwards Aquifer occurs at a depth of approximately 1,500 feet below grade (CH2M-Hill, 2003).

Potential Historic Source Areas and Chemicals of Potential Concern (COPCs) – Petroleum hydrocarbons are the primary COPCs present at the Site. Potential historic source areas (PHSAs) for these COPCs include former processing buildings, tank batteries, a railroad loading platform, an oil/water separator and drum storage areas. Notwithstanding these PHSAs, it is recognized that the locations at which COPCs were stored, generated, and handled have likely changed to some degree during the 70 years since refinery operations began at the Site and since the years that waste oil recycling and fuel blending activities occurred at the Site. During the performance of preliminary investigation activities at the Site in 2004 (ERM, 2004), petroleum hydrocarbon odors, staining, or light non-aqueous phase liquid (LNAPL) were observed in most of the seven borings drilled on the Site. Thus, attempting to precisely define the historic boundaries of specific PHSAs will likely be of limited benefit for site investigation purposes, particularly given the relatively small (approximately 7-acre) area of the Site and the disturbance of Site features and surface soils during previous removal actions at the Site. The PCSM recognizes that multiple PHSAs potentially exist at the Site, but also considers that a detailed characterization of each of these areas is not warranted.

Light non-aqueous phase liquid (LNAPL) has been reported at several locations on-site (MW-3, MW-5, MW-6, and ERM-SB-8) (see Figure 1 for locations). The lateral extent of LNAPL has not been defined, although the LNAPL thicknesses reported in Site monitoring wells were less than 1.0 foot when last measured in 2004 (ERM, 2004).

The former Kelly AFB west of the Site is the source of a large regional plume of chlorinated ethenes in the uppermost water-bearing unit. The aforementioned automobile repair and service station facilities north and west of the Site may be potential sources of petroleum hydrocarbons to the uppermost water-bearing unit in the Site vicinity.

Possible Exposure Pathways - Figure 2 identifies potential human health exposure pathways at the Site and describes the processes or mechanisms by which human receptors may reasonably come into contact with Site-related constituents. Figure 3 presents a similar analysis for potential ecological receptors. Exposure pathways are dependent on current and future land use. An exposure pathway is defined by four elements (U.S. EPA, 1989):

- A source material and mechanism of constituent release to the environment;
- An environmental migration or transport media (e.g., soil) for the released constituents;
- A point of contact with the media of interest; and
- An exposure route (e.g., ingestion) at the point of contact.

An exposure pathway is considered "complete" if all four elements are present.

Complete human health exposure pathways are indicated with a bold line and check in the receptor column of Figure 2. Although a pathway may be preliminarily identified as complete, additional data are often needed to evaluate the significance of the complete pathway. The PCSM also identifies potentially complete pathways with a dashed line and check in the potential receptors column of Figure 2. Information related to potentially complete exposure pathways will be used to identify data gaps and help guide the data collection effort, ultimately ensuring that sufficient data are collected to facilitate quantitative evaluation in the human health risk assessment.

As shown in Figure 2, direct contact with and ingestion of soil by potential on-site receptors is considered a complete and potentially significant pathway. Additional data are needed from the RI to evaluate the significance of this pathway. Pathways associated with inhalation of indoor/ambient air by potential on-site receptors as a result of COPC volatilization from soil or dispersion from fugitive dust are identified as potentially complete pathways meaning that data are needed from the RI to evaluate whether these pathways are complete and/or significant. Potential on-site or off-site receptor inhalation of COPCs due to volatilization from LNAPL and/or groundwater is also considered a potentially complete pathway requiring RI data for further evaluation. Given the nature of the potential off-site receptor exposure via this pathway (relative to the restricted nature of on-site pathways as a result of perimeter Site fencing), the evaluation of the off-site component of this pathway will be a higher priority than the on-site pathways, and thus an initial RI data collection activity. If complete pathways are identified during the RI (i.e., concentrations exceed pathway-based screening criteria at a receptor), then risks will be calculated for the potentially exposed population during the risk assessment.

Complete ecological pathways are indicated with a solid box designation on Figure 3 while potentially complete pathways on this figure are indicated with a solid circle. Complete ecological exposure pathways are related to direct contact and ingestion of soil, and ingestion of food. Soil data collected during the RI will be used to evaluate the significance of these pathways in a Screening-Level Ecological Risk Assessment (SLERA). Additional data are needed during the RI to evaluate the completeness of the surface water runoff ecological exposure pathway.

As data are collected during the RI, the PCSM presented in Figures 2 and 3 will be updated and refined.

DATA NEEDS

Based on an evaluation of the potentially complete pathways identified in Figures 2 and 3, and an analysis of the information needed to assess the completeness of these pathways, the data needs listed in Table 1 were developed. This table illustrates the data needs evaluation process by: (1) noting the conceptual model potential exposure routes that were judged to be potentially complete or complete and potentially significant; (2) identifying the specific data needs for determining whether that pathway is complete and significant; (3) listing the existing data that were reviewed as part of an initial evaluation; and (4) describing the RI activities to be performed to fill the identified data need. As described in Table 1, the identified data needs are associated with four general categories: (1) Site soils data needed to evaluate the direct contact, ingestion or inhalation potential exposure pathways from soil to on-site and off-site receptors, (2) Site LNAPL and groundwater data needed to evaluate the inhalation potential exposure pathways from these media to on-site receptors; (3) off-site groundwater data needed to evaluate the inhalation

potential exposure pathway from groundwater to off-site receptors; and (4) Site topographic information needed to evaluate the surface runoff ecological exposure pathway. As discussed above, the off-site groundwater data need is proposed as the initial data collection activity because of the relatively higher priority of the off-site pathway and because these data would provide an "outside-in" approach toward quickly establishing the extent of COPCs in the Site vicinity.

Several FS data needs are also included in Table 1. Potential remedial alternatives to be evaluated in the FS will not be limited to those associated with specific data needs listed in Table 1. The FS data needs listed in Table 1 represent those for which specific information should be obtained as part of the RI. If additional FS data needs are identified as the interactive RI/FS process proceeds, appropriate programs to fill these needs will be developed. The development and evaluation of remedial alternatives will be performed as specified in the RI/FS guidance. First, the risk assessment findings will be used to develop remedial action objectives. General response actions will be developed to address these objectives, and then technology/alternatives associated with those response actions will be screened.

As indicated in Table 1, the currently identified FS data needs consist of: (1) data related to soil geotechnical properties (needed to evaluate potential remedial action alternatives involving capping, using pavement, turf or other cover); and (2) data related to LNAPL properties and LNAPL recoverability (needed to evaluate potential remedial action alternatives involving LNAPL recovery).

EXISTING DATA EVALUATION

The first step in the approach to scoping the investigation program for filling the identified data needs is the review of existing data. As noted above, existing data were used to develop the PCSM and the data needs summary as indicated in Table 1. Toward that end, existing soil and groundwater data from the Site, along with associated reference values were compiled into the tables listed below. These data are used for scoping purposes and are not intended for use in risk assessment calculations or as the sole basis for evaluation of potential remedial alternatives in the FS.

Table 2 - Metals Concentrations in Soil
Table 3 – Volatile Organic Compound Concentrations in Soil
Table 4 – Semi-Volatile Organic Compound Concentrations in Soil
Table 5 – Pesticide Concentrations in Soil
Table 6 – Metals Concentrations in Groundwater
Table 7 – Volatile Organic Compound Concentrations in Groundwater
Table 8 – Semi-Volatile Organic Compound Concentrations in Groundwater

Human health risk based values for soils are conservatively set as the lower of EPA's Region 6 soil screening levels, and Texas Commission on Environmental Quality (TCEQ) Protective Concentrations Levels (PCLs) for soil contact (including ingestion, dermal contact and/or inhalation) by residential receptors. Ecological risk based values were determined from the lower of EPA's Region 6 soil screening levels, and TCEQ Ecological Benchmarks for soil. For soils, the reference value is the lowest of the human health or ecological risk based value. For groundwater, the reference values are conservatively set as the lower of EPA's maximum contaminant levels (MCLs) for public water supplies (when available), and the TCEQ residential PCLs for groundwater ingestion.

The existing datasets were used to develop preliminary projections of number of samples and sample locations for the RI/FS. Existing dataset characteristics (e.g., mean, standard deviation, distribution type) and threshold values (e.g., reference values) for selected representative compounds in soil were input into Visual Sample Plan (VSP) software (Version 4.0) as a preliminary evaluation of the potential number of soil samples needed for the RI. The VSP projection is based on the objective of identifying the number of samples needed to demonstrate that a sample population is below a specific reference value. For metals, such as arsenic, chromium, and lead, this evaluation projected approximately 11 to 13 samples. For xylenes, the projection was 29 soil samples. For other compounds, most notably benzene and benzo(a)pyrene, where Site concentrations significantly exceed reference values, the VSP projection was several thousand of samples, thereby illustrating the limitations of this approach for datasets that significantly exceed threshold values.

Selected groundwater data from ongoing groundwater monitoring activities associated with the former East Kelly Air Force Base are provided in Table 9. The monitoring wells listed in this table are located within approximately one-half mile of the Site (see Figure 5 for selected monitoring well locations) and have been sampled on an annual basis since at least 2001. Groundwater samples collected between 2001 and 2006 were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) in addition to chlorinated ethenes. Occasional BTEX detections have been reported in these wells (none since 2005) and all reported concentrations have been less than 0.001 mg/L. These data and the groundwater data for off-site temporary wells sampled in 2004 (Table 7) suggest that the lateral extent of BTEX-containing groundwater may be limited to the near vicinity of the Site.

RI/FS DATA COLLECTION ACTIVITIES

The conceptual descriptions of RI activities in Table 1 and the subsequent review of existing data have been used to identify the initial RI/FS data collection activities described below. The number of samples, and sample locations ultimately needed to satisfy RI/FS objectives will be determined by the Site conditions and the data obtained; however, consistent with the overarching objective of this scope of work, the sample numbers/locations are a projection based on existing information of those needed to fill the identified data gaps during the RI. As noted previously, it is anticipated that investigation activities will initially focus on off-site groundwater, and then evaluate on-site soils, groundwater and LNAPL. Clearing of the Site has been performed to assist in locating previous investigation locations and providing access to proposed sample locations. More detailed descriptions of the RI activities will be provided in the RI/FS Work Plan, the Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP) as specified in the Statement of Work.

Topographic Survey

In order to fill the data need for topographic information to evaluate the surface runoff, a topographic survey of the Site was performed. The deliverable for this survey will be a topographic map and an evaluation of the Site drainage patterns. The collection and analysis of a few surface water samples may be required if it is concluded that significant surface water pooling is observed at or near the Site.

Off-site Groundwater Investigation

Based on the PCSM analysis described above, five permanent off-site groundwater monitoring wells will be installed and sampled. The purpose of these wells is to evaluate the off-site

groundwater pathway and delineate the off-site lateral extent of the groundwater COPCs from the Site in the uppermost water-bearing unit. As shown on Figure 4, these wells include the following:

- One monitoring well on Brunswick Boulevard, near the intersection with Somerset Road;
- Two monitoring wells along Fitch Street east of Somerset Road; and
- Two monitoring wells along Milvid Ave. east of Somerset Road.

The soil borings for these monitoring wells will be drilled using hollow-stem augers to the top of the Navarro Shale. Borings will be sampled continuously for lithologic purposes and for field headspace measurements using an organic vapor meter. The monitoring wells will be developed using bailing, surging and/or pumping. Following development and a sufficient recovery time, the wells will be gauged for water levels and the possible presence of LNAPL. The wells will then be purged and sampled using low flow sampling methods. Temperature, specific conductance, pH, dissolved oxygen (DO) and oxidation/reduction potential (ORP) will be measured in a flow cell during purging and sampling. Sampling procedures will be detailed in the FSP.

Based on historical knowledge of Site activities and existing data, groundwater samples from the off-site groundwater monitoring wells will be analyzed for the VOCs, SVOCs TPH, and metals indicated in Table 10. Laboratory and quality assurance/quality control procedures will be specified in the FSP and QAPP. As part of the RI, groundwater data will be compared to appropriate reference values listed in Tables 6 through 8 (as updated to reflect current available values at the time of evaluation for all compounds detected) to delineate the lateral extent of these COPCs, as necessary (subject to adjustment for background concentrations as indicated by Site data, data from former Kelly AFB investigations, or TCEQ reference values). The groundwater data will also be used in the human health risk assessment to evaluate the completeness and significance of the identified potential groundwater exposure pathways.

Site Soil and Groundwater Investigations

Consistent with the Site data needs listed in Table 1, 14 on-site soil borings with monitoring wells in the borings will be installed as follows:

- Two groundwater monitoring wells along the upgradient (western) Site boundary (Figure 4) to confirm groundwater flow directions and assess potential upgradient or on-site sources;
- Three groundwater monitoring wells in the northern Site interior and two groundwater monitoring wells in the southern Site interior to provide groundwater data (or LNAPL thickness measurements if LNAPL is encountered at these locations), and allow evaluation of temporal groundwater concentration trends and natural attenuation processes;
- Two groundwater monitoring wells along the downgradient (eastern) Site boundary to document dissolved-phase hydrocarbon constituent concentrations at the Site boundary; and
- Five LNAPL monitoring wells to define the lateral extent of LNAPL or provide LNAPL thickness measurements (and temporal thickness trends) if LNAPL is encountered.

These soil borings will be drilled using hollow-stem augers to the top of the Navarro Shale and will be sampled continuously for lithologic purposes. The soil borings will also be continuously logged for relative moisture content, organic vapor meter (OVM) readings, and visual or

olfactory evidence of contamination. It is anticipated that soil samples will be collected for laboratory analysis from the 0 to 0.5 foot depth interval and from a second interval within the 0.5 to 4 feet depth range to be determined based on field observations, including soil headspace measurements using the organic vapor meter. This second depth interval for laboratory analysis will be selected to correspond to the highest organic vapor reading and/or visual indications of contamination within this range. Existing data and observations from previous soil borings suggest that field indications of petroleum hydrocarbons (e.g., visual soil staining, elevated soil headspace measurements) will likely be present throughout the vadose zone at all of the on-site soil boring locations. If such indications are not encountered at a specific soil boring location, a third soil sample for laboratory analysis will be collected from the shallowest depth interval below 4 feet at which such indications are not observed.

Based on historical site operations information and existing data, soil boring samples will be analyzed for VOCs, SVOCs, metals, TPH, and moisture content as indicated in Table 10. Soil data will be compared to appropriate reference values listed in Tables 2 through 4 (as updated to reflect current available values at the time of evaluation for all compounds detected) to delineate the off-site lateral extent of these COPCs, as necessary (subject to adjustment for background concentrations as indicated by Site data, data from former Kelly AFB investigations, or TCEQ reference values). The soil data will also be used in the risk assessments to evaluate the completeness and significance of the identified potential soil exposure pathways.

Pending completion of the soil borings and after evaluation of the associated data, one or more on-site test pits will be excavated to provide a visual cross-section of potentially impacted soils near the Site boundary. It is anticipated that one of these test pits will be located in the northwestern corner of the Site near US Highway 81 (Figure 4). Depending on the conditions observed, one or more soil samples may be collected for laboratory analysis.

One sample of each general soil type will be selected for analysis for total organic carbon, bulk density, moisture content, swell or settlement potential, one-dimensional consolidation testing and compaction characteristics. In addition, three samples of each general soil type will be selected for grain-size distribution and Atterburg Limit tests. Information from these soil tests will be used for evaluating capping-related remedial action alternatives in the FS.

Monitoring wells will be developed using bailing, surging and/or pumping. Following development and a sufficient recovery time, previously existing groundwater monitoring wells, and the newly installed groundwater and LNAPL monitoring wells will be gauged for water levels and the possible presence of LNAPL. The previously existing and new groundwater monitoring wells will then be purged and sampled using low flow sampling methods with temperature, specific conductance, pH, DO and ORP monitored during purging and sampling as described for the off-site groundwater monitoring wells. Hydraulic testing (slug tests) will be performed on one or more representative wells after a sufficient recovery time from sample collection.

Groundwater samples from the groundwater monitoring wells will be analyzed for the VOCs, SVOCs, TPH and metals indicated in Table 10. These data will be compared to appropriate Tables 6 through 8 reference values (as updated to reflect current available values at the time of evaluation for all compounds detected) to delineate the lateral extent of these COPCs, and will be used in the human health risk assessment to evaluate the completeness and significance of the identified potential exposure pathways.

Assuming sufficient sample volumes can be obtained, two representative LNAPL samples will be collected for TPH and VOC analyses and will also be tested for viscosity, density, air/LNAPL interfacial tension, and LNAPL/water interfacial tension (see Table 10). In addition, LNAPL recoverability testing will be performed at selected wells where a sufficient LNAPL thickness is observed. Information from these LNAPL tests will be used for evaluating LNAPL recovery-related remedial action alternatives in the FS.

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TABLES

TABLE 1

DATA NEEDS SUMMARY

August 25, 2009

PRELIMINARY CONCEPTUAL SITE MODEL POTENTIAL EXPOSURE ROUTE[1]	DATA NEEDS	APPROACH TO FILL DATA NEED		
		EXISTING DATA REVIEWED	REMEDIAL INVESTIGATION ACTIVITY	INVESTIGATION METHODS AND INITIAL NUMBER OF SAMPLES
On-site exposure to on-site soil via direct contact and ingestion for human and ecological receptors.	Volatile organic compound (VOC), Semi-volatile organic compound (SVOC), total petroleum hydrocarbon (TPH) and metals concentrations in Site surface and subsurface soil. Geotechnical properties of Site soil.	Existing Site soil data.	Investigate lateral and vertical extent of VOC, SVOC, TPH and metals concentrations in Site surface and subsurface soil samples relative to pathway-based screening criteria. Collect samples for geotechnical testing.	• Drill 14 on-site soil borings to top of unweathered Navarro Shale. Sample continuously for lithologic purposes. • Collect 2 soil samples from each boring for laboratory analysis (from 0-0.5 ft. depth interval and second location within 0.5-4.0 ft. range based on field conditions). If unimpacted soils are observed in vadose zone, collect third sample from top of unimpacted zone below 4.0 ft. • Pending soil boring findings excavate one or more test pits near Site boundary. Depending on soil conditions observed, collect one or more samples for laboratory analyses. • Analyze soil samples for VOCs, SVOCs, TPH, metals, and moisture content. • Analyze selected representative samples for potential fate and transport parameters (total organic carbon, bulk density).
On-site human receptor inhalation of vapors that have migrated from subsurface soil through the soil pore space and into indoor/ambient air.	VOC concentrations in Site subsurface soil.	Existing Site soil data.	Investigate lateral extent of VOCs in subsurface soil samples relative to pathway-based screening criteria.	
On-site and off-site human receptor inhalation of particulates in ambient air resulting from fugitive dust generation and/or human contact with/ingestion of particles deposited on Site surface soil.	SVOC, TPH and metals concentrations in Site surface soil.	Existing soil data and Site setting/vegetative cover information.	Investigate lateral extent of SVOC, TPH and metals concentrations in Site surface soil.	

TABLE 1
DATA NEEDS SUMMARY

August 25, 2009

PRELIMINARY CONCEPTUAL SITE MODEL POTENTIAL EXPOSURE ROUTE[1]	DATA NEEDS	APPROACH TO FILL DATA NEED		
		EXISTING DATA REVIEWED	REMEDIAL INVESTIGATION ACTIVITY	INVESTIGATION METHODS AND INITIAL NUMBER OF SAMPLES
On-site human receptor inhalation of vapors that have migrated from LNAPL and/or groundwater through the soil pore space and into on-site indoor/ambient air.	VOC and TPH concentrations in Site groundwater and LNAPL. Location and extent of LNAPL. Groundwater flow rate and direction in affected water-bearing unit. BTEX natural attenuation potential.	Existing Site groundwater and LNAPL chemistry data. Existing groundwater flow rate and direction information. Existing LNAPL extent and thickness information.	Investigate lateral extent and thickness of LNAPL on-site. Evaluate VOC and TPH concentrations in LNAPL. Investigate lateral extent of VOCs in Site groundwater relative to pathway-based screening criteria. Evaluate affected water-bearing unit hydraulic characteristics. Assess BTEX natural attenuation potential through evaluation of multiple lines of evidence (temporal trends, geochemical conditions, etc.).	• Install 9 permanent on-site groundwater monitoring wells. • Install 5 permanent on-site LNAPL monitoring wells. • Gauge all new and previous on-site wells for possible presence of LNAPL and measure water levels. • Collect two representative LNAPL samples and analyze for VOCs and TPH. • Collect groundwater samples from existing and new on-site groundwater monitoring wells if LNAPL is not present. Measure temperature, specific conductance, pH, dissolved oxygen (DO) and oxidation-reduction potential (ORP) during purging. • Analyze groundwater samples for VOCs • Analyze groundwater samples for SVOCs, TPH and metals (as EPA has specified). • Perform hydraulic testing (slug tests) on selected monitoring wells. • Perform second LNAPL gauging, water level measurement and groundwater sampling event.

TABLE 1
DATA NEEDS SUMMARY

August 25, 2009

PRELIMINARY CONCEPTUAL SITE MODEL POTENTIAL EXPOSURE ROUTE[1]	DATA NEEDS	APPROACH TO FILL DATA NEED		
		EXISTING DATA REVIEWED	REMEDIAL INVESTIGATION ACTIVITY	INVESTIGATION METHODS AND INITIAL NUMBER OF SAMPLES
Off-site human receptor inhalation of vapors that have migrated from groundwater through the soil pore space and into off-site ambient/indoor air.	VOC concentrations in off-site groundwater. Groundwater flow rate and direction in affected water-bearing unit off-site. BTEX natural attenuation potential.	Existing groundwater and LNAPL chemistry data. Existing groundwater flow rate and direction information.	Investigate lateral extent of VOCs in off-site groundwater relative to pathway-based screening criteria. Assess BTEX natural attenuation potential through evaluation of multiple lines of evidence (temporal trends, geochemical conditions, etc.).	• Install 5 permanent off-site groundwater monitoring wells. • Measure water levels in all new off-site wells for possible presence of LNAPL. • Collect groundwater samples from new off-site groundwater wells. Measure temperature, specific conductance, pH, DO and ORP during purging. • Analyze groundwater samples for VOCs. • Analyze groundwater samples for SVOCs, TPH and metals (as EPA has specified). • Perform second water level measurement and groundwater sampling event.
Ecological receptor exposure via surface run-off from Site soils.	Runoff flow patterns at Site.	None.	Topographic survey of Site.	• Prepare Site topographic map and evaluate Site drainage patterns. • Collect and analyze surface water samples from on-site pond areas if significant surface water pooling observed.
Feasibility Study Data Need	Geotechnical properties of Site soils with regard to potential capping remedial action alternatives.	Existing soil data.	Test representative samples of each general soil type for relevant geotechnical parameters.	• Collect a representative sample of each general soil type and test for swell or settlement potential, one-dimensional consolidation, and compaction characteristics. • Collect three representative samples of each general soil type and test for grain-size distribution, and Atterburg Limits (fine-grained soils only).

TABLE 1
DATA NEEDS SUMMARY

Feasibility Study Data Need	Physical properties of LNAPL with regard to potential LNAPL recovery remedial action alternatives.	Existing LNAPL data.	Test representative LNAPL samples for relevant physical properties. Evaluate LNAPL recoverability.	• Collect two representative LNAPL samples and test for dynamic viscosity, density, air/LNAPL interfacial tension, and LNAPL/water interfacial tension (assuming sufficient LNAPL sample volumes can be obtained). • Perform LNAPL recoverability testing on selected well(s) where LNAPL is present.

Note:
[1]Potential exposure routes shown on Figure 2 for human health receptors and on Figure 3 for ecological receptors.

Table 2 - Metals Concentrations in Soil

August 25, 2009

Sample ID	Sample Date	Sample Depth (ft below grade)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)
R & B								
R-SO-4	7/9/98	0-0.25	1,910	< 13.2	1.8	25.8	< 1.32	< 1.32
R-SO-5	7/9/98	0-0.25	1,070	< 11.1	4.9	23.2	< 1.11	< 1.11
R-SO-6	7/9/98	0-0.25	549	< 10.7	< 1.1	17.7	< 1.06	< 1.06
R-SO-7	7/9/98	0-0.25	3,220	< 10.4	3.3	112.0	< 1.04	< 1.04
R-SO-8	7/9/98	0-0.25	913	< 10.9	41.5	66.8	< 1.09	< 1.09
R-SO-9	7/9/98	0-0.25	1,340	< 10.5	1.9	42.6	< 1.05	< 1.05
R-SO-11	7/9/98	0-0.25	872	< 10.6	5.7	98.8	< 1.06	< 1.06
R-SO-12	7/9/98	Not available	1,600	< 10.4	1.5	13.9	< 1.04	< 1.04
R-SO-13	7/9/98	0-0.25	22,000	< 14.4	6.9	116.0	< 1.44	< 1.44
R-SO-14	7/9/98	0-0.25	16,300	< 13.8	8.8	109.0	< 1.38	< 1.38
R-SO-16	7/9/98	0-2	8,870	< 10.6	3.0	169.0	< 1.06	< 1.06
R-SO-17	7/9/98	0-2	12,400	< 10.9	2.6	162.0	< 1.09	< 1.09
R-SO-18	7/9/98	0-2	1,910	< 10	1.4	42.0	< 1	< 1
R-SO-19	7/9/98	0-2	3,110	< 10.9	1.1 J	22.6	< 1.09	< 1.09
R-SO-20	7/9/98	0-2	1,700	< 10.9	10.9	70.4	< 1.09	< 1.09
R-SO-21	7/9/98	0-2	11,300	< 10.4	2.5	90.1	< 1.04	< 1.04
R-SO-22	7/9/98	0-0.25	1,330	< 11.3	2.0	67.5	< 1.13	< 1.13
TROPICANA								
T-SO-1	7/9/98	0-2	11,500	< 10.7	4.1	78.6	< 1.08	< 1.08
T-SO-2	7/9/98	0-2	8,030	< 10.7	2.9	141.0	< 1.11	< 1.11
T-Composite	1/30/91	varies (composite sample)	NA	NA	NA	NA	NA	NA
OFFSITE								
O-SO-15	7/9/98	0-0.25	9,610	< 10.5	2.3	87.9	< 1.04	< 1.04
O-SO-23	7/9/98	Not available	8,270	< 10.4	3.8	97.3	< 1.04	< 1.04
O-SO-24	7/9/98	Not available	6,780	< 12.3	7.2	110.0	< 1.24	< 1.24
O-SO-25	7/9/98	Not available	8,150	< 9.75	6.8	91.4	< 0.97	< 0.97
BACKGROUND								
B-SO-1	7/9/98	0-0.25	8,170	< 11	3.5	65.2	< 1.1	< 1.1
B-SO-2	7/9/98	0-0.25	9,870	< 10.6	2.8	216.0	< 1.06	< 1.06
B-SO-3	7/9/98	0-0.25	8,700	< 10.6	2.7	80.9	< 1.05	< 1.05
HH RBV[1]			6,500	15	0.39	7,800	38	39
ECO RBV[1]			NV	0.27[2]	18	330	10[4]	0.36[4]
Background Concentration[3]			30,000	1	6.3[3]	300	1.84[3]	0.43[3]
RV[2]			6,500	0.27	0.39	330	10	0.36

Table 2 - Metals Concentrations in Soil

August 25, 2009

Sample ID	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)
R & H									
R-SO-4	23,400	3.4	< 13.2	2.1	1,840	9.5	366	45.5	< 0.13
R-SO-5	15,400	2.7	12.9	2.2	3,670	13.7	185	21.2	< 0.11
R-SO-6	705	2.1	< 10.7	< 1.1	1,060	7.1	46	27.3	< 0.11
R-SO-7	79,100	8.9	< 10.4	9.8	6,470	35.7	619	54.0	0.26
R-SO-8	46,900	3.7	406	26.0	12,400	51.7	779	49.3	< 0.11
R-SO-9	226,000	5.3	< 10.5	28.7	2,040	48.1	837	38.6	< 0.11
R-SO-11	205,000	23.8	44.8	37.7	7,690	56.7	874	47	0.36
R-SO-12	25,700	3.7	< 10.4	4.0	3,860	25.3	478	36	< 0.11
R-SO-13	61,000	22.1	< 14.4	10.1	12,000	136	3,560	208	0.14
R-SO-14	69,300	20.1	< 13.8	13.0	9,890	223	2,850	200	0.16
R-SO-16	111,000	10.9	< 10.6	6.0	5,690	77.3	2,110	101	0.26
R-SO-17	97,300	11.1	< 10.9	3.9	8,590	28.2	2,180	143	< 0.11
R-SO-18	256,000	1.0	< 10.0	2.4	1,700	6.0	1,610	72	< 0.10
R-SO-19	194,000	4.1	< 10.9	4.1	3,170	21.5	682	67	< 0.11
R-SO-20	15,000	6.7	< 10.9	26.8	3,410	97.2	346	48	< 0.11
R-SO-21	55,000	8.7	< 10.4	1.9	5,700	36.6	2,460	168	< 0.11
R-SO-22	143,000	2.7	< 11.3	13.6	2,530	43.5	764	89	< 0.11
TROPICANA									
T-SO-1	162,000	7.5	< 10.7	< 1.1	6,260	8.4	2,550	154	< 0.11
T-SO-2	91,300	10.9	< 11.1	< 1.1	10,200	14.4	3,720	169	< 0.11
T-Composite	NA	NA	NA	NA	NA	22	NA	NA	NA
OFFSITE									
O-SO-15	164,000	22.6	< 10.5	13.6	5,420	260	1,890	101	0.20
O-SO-23	57,800	23.5	< 10.4	15.8	5,610	203	2,330	172	0.50
O-SO-24	175,000	134.0	< 12.3	36.0	5,780	234	2,510	236	0.89
O-SO-25	122,000	84.6	< 9.8	27.9	6,370	186	2,260	207	0.40
BACKGROUND									
B-SO-1	61,000	7.0	< 11.0	6.1	4,850	46.3	1,740	240	< 0.11
B-SO-2	60,900	7.6	< 10.6	3.0	5,950	59.3	2,740	233	< 0.11
B-SO-3	121,000	6.1	< 10.6	6.3	5,110	71.3	1,930	176	< 0.11
HH-RBV[1]	NV[2]	210	900	550	23,000	400	NV	3,200	2.1
ECO-RBV[1]	NV	0.4[3]	13	28[4]	NV	11[4]	NV	220[4]	0.1[3]
Background Concentration[5]	NV	43.2[5]	9.93[5]	30.2[5]	15,000	33.1[5]	NV	506[5]	0.04
RV[6]	NV	0.4	13	28	23,000	11	NV	220	0.1

Table 2 - Metals Concentrations in Soil

August 25, 2009

Sample ID	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
R & B								
R-SO-4	5.0	297	< 1.32	< 1.32	355	< 1.32	< 13.2	22
R-SO-5	2.9	135	1.33	< 1.11	258	< 1.11	< 11.1	24
R-SO-6	< 1.1	91	< 1.06	< 1.06	132	< 1.06	< 10.7	12
R-SO-7	3.7	619	< 1.04	< 1.04	165	< 1.04	< 10.4	113
R-SO-8	10.2	111	1.95	< 1.09	415	< 1.09	< 10.9	517
R-SO-9	1.7	227	< 1.05	< 1.05	< 11	< 1.05	< 10.5	351
R-SO-11	2.8	93	1.48	< 1.06	< 11	< 1.06	< 10.6	143
R-SO-12	2.1	222	< 1.04	< 1.04	< 357	< 1.04	< 10.4	563
R-SO-13	< 10.4	4,690	< 1.44	< 1.44	< 376	< 1.44	16.1	183
R-SO-14	9.1	3,730	< 1.38	< 1.38	318	< 1.38	16.0	197
R-SO-16	5.3	2,430	< 1.06	< 1.06	684	< 1.06	13.0	82
R-SO-17	7.6	2,970	< 1.09	< 1.09	432	< 1.09	< 10.9	63
R-SO-18	< 10	510	< 1.00	< 1	< 10	< 1.00	< 10.0	25
R-SO-19	2.4	330	< 1.09	< 1.09	119	< 1.09	< 10.9	34
R-SO-20	3.9	66	< 1.09	< 1.09	327	< 1.09	< 10.9	65
R-SO-21	5.4	2,650	< 1.04	< 1.04	466	< 1.04	< 10.4	72
R-SO-22	2.0	362	< 1.13	< 1.13	147	< 1.13	< 11.3	76
TROPICANA								
T-SO-1	4.5	3,950	< 1.08	< 1.08	13	< 1.08	14.1	20
T-SO-2	8.2	2,620	1.31	< 1.11	244	< 1.11	14.9	47
T-Composite	NA	NA	NA	NA	NA	NA	NA	NA
OFFSITE								
O-SO-15	4.2	2,800	< 1.04	< 1.04	83	< 1.04	< 10.5	172
O-SO-23	6.9	2,500	< 1.04	< 1.04	330	< 1.04	< 10.8	73
O-SO-24	7.4	2,140	< 1.24	< 1.24	289	< 1.24	< 12.3	348
O-SO-25	5.9	2,460	< 0.97	< 0.97	191	< 0.97	< 9.8	250
BACKGROUND								
B-SO-1	6.8	2,800	< 1.10	< 1.1	195	< 1.1	< 11.0	44
B-SO-2	5.7	2,670	< 1.06	< 1.06	160	< 1.06	11.3	40
B-SO-3	5.3	3,420	< 1.05	< 1.05	60	< 1.05	< 10.6	79
HH-RBV[1]	830	NV	310	95	NV	5.5	78	9,900
ECO-RBV[1]	30[7]	NV	1[7]	2[7]	NV	1[7]	2[7]	46[8]
Background Concentration[5]	22.7[5]	NV	0.3	1.15[5]	NV	9.3	50.0	73[5]
RV[4]	30	NV	1	2	NV	1.0	2	46

Notes:

1 Risk-Based Value (RBV) based on EPA and TCEQ criteria for residential land-use

2 NV = No value available

3 TCEQ Texas-Specific Background Concentration (30 TAC 350.51(m)) unless indicated otherwise

4 Reference Value (RV) set at lowest of human health (HH) RBV and ecological (ECO) RBV

5 Background concentrations for surface soils at Former Kelly Air Force Base per *Zone 4 RCRA Facility Investigation Report* (CHM2Hill, 2003)

6 Values in bold exceed reference value

7 ECO-RBV is a TCEQ published value (less than EPA value, if published)

8 ECO-RBV is an EPA published value (less than TCEQ value, if published)

Table 3 - Volatile Organic Compound Concentrations in Soil

August 25, 2009

Sample ID	Sample Date	Sample Depth (ft below grade)	2- Butanone (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Isopropylbenzene (mg/kg)	Naphthalene (mg/kg)
R & H							
R-SO-4	07/09/98	0-0.25	< 0.013	< 0.003	< 0.003	< 0.003	< 0.005
R-SO-5	07/09/98	0-0.25	< 1.370	< 0.275	< 0.275	< 0.275	< 0.275
R-SO-6	07/09/98	0-0.25	< 1.340	< 0.269	< 0.269	< 0.269	< 0.269
R-SO-7	07/09/98	0-0.25	< 1.320	< 0.263	< 0.263	< 0.263	< 0.263
R-SO-8	07/09/98	0-0.25	< 1.330	< 0.266	< 0.266	< 0.266	< 0.266
R-SO-9	07/09/98	0-0.25	< 1.370	< 0.275	< 0.275	< 0.275	< 0.275
R-SO-11	07/09/98	0-0.25	< 1.320	< 0.263	< 0.263	< 0.263	< 0.263
R-SO-12	07/09/98	Not available	< 1.330	< 0.266	< 0.266	< 0.266	< 0.266
R-SO-13	07/09/98	0-0.25	< 0.014	< 0.003	< 0.003	< 0.003	< 0.003
R-SO-14	07/09/98	0-0.25	< 1.710	< 0.342	< 0.342	< 0.342	< 0.342
R-SO-16	07/09/98	0-2	< 0.011	< 0.002	< 0.002	< 0.002	< 0.002
R-SO-17	07/09/98	0-2	< 0.054	< 0.011	< 0.011	< 0.011	< 0.011
R-SO-18	07/09/98	0-2	< 1.250	< 0.250	< 0.250	< 0.250	< 0.250
R-SO-19	07/09/98	0-2	< 1.340	< 0.269	< 0.269	< 0.269	< 0.269
R-SO-20	07/09/98	0-2	< 1.390	0.431	< 0.278	< 0.278	0.868
R-SO-21	07/09/98	0-2	< 1.330	0.681	< 0.266	< 0.266	< 0.266
R-SO-22	07/09/98	0-0.25	< 0.011	< 0.002	0.007	0.002	0.048
R-ERM-SB-6	04/01/04	20-22.5	1.8 J	6.2	43.0	NA[3]	NA
R-ERM-SB-8	03/31/04	19-21.5	1.8	4.0	10.0	NA	NA
R-ERM-SB-11	04/01/04	17.5-20	1.8	0.38 J	5.3	NA	NA
R-ERM-SB-12	04/01/04	17.5-20	1.4	0.29 J	23.0	NA	NA
TROPICANA							
T-SO-1	07/09/98	0-2	< 10.8	< 0.002	< 0.002	< 0.002	< 0.002
T-SO-2	07/09/98	0-2	< 11.1	< 0.002	< 0.002	< 0.002	< 0.002
T-2 (4.5')	05/23/90	4.5	NA	< 0.6	< 0.6	NA	NA
T-4 (5')	05/23/90	5	NA	< 0.6	< 0.6	NA	NA
T-MW1 (15 - 17')	10/25/90	15-17	NA	16.0	45.0	NA	NA
T-MW1 (39 - 40')	10/25/90	39-40	NA	< 0.4	< 0.4	NA	NA
T-B3 (10 - 12')	10/25/90	10-12	NA	12.0	21.0	NA	NA
T-B3 (42 - 43')	10/25/90	42-43	NA	< 0.4	< 0.4	NA	NA
T-MW2 (14 - 16')	10/26/90	14-16	NA	< 0.4	6.5	NA	NA
T-MW2 (40 - 42')	10/26/90	40-42	NA	< 0.4	< 0.4	NA	NA
T-B4 (10 - 12')	10/26/90	10-12	NA	< 0.4	< 0.4	NA	NA
T-B4 (42')	10/26/90	42	NA	< 0.4	< 0.4	NA	NA
T-B4 (0 - 2')	10/26/90	0-2	NA	< 0.4	< 0.4	NA	NA
T-B4 (12 - 14')	10/26/90	12-14	NA	< 0.4	< 0.4	NA	NA
T-MW3 (17 - 19')	01/14/91	17-19	NA	81.0	200	NA	NA
T-MW3 (47 - 48')	01/14/91	47-48	NA	< 0.4	< 0.4	NA	NA
T-MW4 (6 - 8')	01/15/91	6-8	NA	< 0.4	< 0.4	NA	NA
T-MW4 (16 - 18')	01/15/91	16-18	NA	< 0.4	0.9	NA	NA
T-MW4 (42 - 44')	01/15/91	42-44	NA	< 0.4	< 0.4	NA	NA
T-MW6 (17 - 19')	01/17/91	17-19	NA	15.0	44.0	NA	NA
T-MW6 (41.5 - 43')	01/17/91	41.5-43	NA	< 0.4	< 0.4	NA	NA
OFFSITE							
O-SO-15	07/09/98	0-0.25	< 0.054	< 0.011	< 0.011	< 0.011	< 0.011
O-SO-23	07/09/98	Not available	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002
O-SO-24	07/09/98	Not available	< 0.001	< 0.003	< 0.003	< 0.003	< 0.003
O-SO-25	07/09/98	Not available	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002
BACKGROUND							
B-SO-1	07/09/98	0-0.25	< 0.011	< 0.002	< 0.002	< 0.002	< 0.002
B-SO-2	07/09/98	0-0.25	< 0.011	< 0.002	< 0.002	< 0.002	< 0.002
B-SO-3	07/09/98	0-0.25	< 0.011	< 0.002	< 0.002	< 0.002	< 0.002
HH-RBV[1]			27,000	0.66	230	370	120
ECO-RBV[2]			NV	NV	NV	NV	NV
RV[3]			27,000	0.66	230	370	120

Table 3 - Volatile Organic Compound Concentrations in Soil

August 25, 2009

Sample ID	n-Propylbenzene (mg/kg)	Toluene (mg/kg)	1, 2, 4-Trimethylbenzene (mg/kg)	1, 3, 5-Trimethylbenzene (mg/kg)	Xylene (mg/kg)
R & D					
R-SO-4	< 0.003	< 0.003	0.004	< 0.003	< 0.004
R-SO-5	< 0.275	< 0.275	< 0.275	< 0.275	< 0.275
R-SO-6	< 0.269	< 0.269	< 0.269	< 0.269	< 0.269
R-SO-7	< 0.263	< 0.263	< 0.263	< 0.263	< 0.263
R-SO-8	< 0.266	< 0.266	< 0.266	< 0.266	< 0.266
R-SO-9	< 0.275	< 0.275	< 0.275	< 0.275	< 0.275
R-SO-11	< 0.263	< 0.263	< 0.263	< 0.263	< 0.263
R-SO-12	< 0.266	< 0.266	< 0.266	< 0.266	< 0.266
R-SO-13	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
R-SO-14	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342
R-SO-16	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
R-SO-17	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011
R-SO-18	< 0.250	< 0.250	< 0.250	< 0.250	< 0.250
R-SO-19	< 0.269	< 0.269	< 0.269	< 0.269	< 0.269
R-SO-20	< 0.278	< 0.278	< 0.278	< 0.278	< 0.278
R-SO-21	< 0.266	< 0.266	< 0.266	< 0.266	< 0.266
R-SO-22	0.003	0.008	0.095	0.033	0.068
R-ERM-SB-6	NA	5.5	NA	NA	170
R-ERM-SB-8	NA	19.0	NA	NA	63.0
R-ERM-SB-11	NA	0.27 J	NA	NA	47.0
R-ERM-SB-12	NA	34.0	NA	NA	240
TROPICANA					
T-SO-1	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
T-SO-2	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
T-2 (4.5')	NA	< 0.6	NA	NA	< 0.6
T-4 (5')	NA	< 0.6	NA	NA	< 0.6
T-MW1 (15 - 17')	NA	< 3.0	NA	NA	8.1
T-MW1 (39 - 40')	NA	< 0.4	NA	NA	< 0.4
T-B3 (10 - 12')	NA	< 3.0	NA	NA	2.5
T-B3 (42 - 43')	NA	< 0.4	NA	NA	< 0.4
T-MW2 (14 - 16')	NA	< 0.4	NA	NA	6.0
T-MW2 (40 - 42')	NA	< 0.4	NA	NA	< 0.4
T-B4 (10 - 12')	NA	< 0.4	NA	NA	5.8
T-B4 (42')	NA	< 0.4	NA	NA	< 0.4
T-B4 (6 - 7')	NA	< 0.4	NA	NA	< 0.4
T-B4 (12 - 14')	NA	< 0.4	NA	NA	< 0.4
T-MW3 (17 - 19')	NA	**880**	NA	NA	**1,500**
T-MW3 (47 - 48')	NA	< 0.4	NA	NA	< 0.4
T-MW4 (6 - 8')	NA	2.9	NA	NA	18.0
T-MW4 (16 - 18')	NA	1.3	NA	NA	12.0
T-MW4 (42 - 44')	NA	< 0.4	NA	NA	< 0.4
T-MW6 (17 - 19')	NA	**150**	NA	NA	**300**
T-MW6 (41.5 - 43')	NA	0.8	NA	NA	< 0.4
OFFSITE					
O-SO-15	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011
O-SO-23	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
O-SO-24	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
O-SO-25	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
BACKGROUND					
B-SO-1	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
B-SO-2	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
B-SO-3	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
HH-RBV[1]	140	520	52	21	210
ECO-RBV[1]	NV	200	NV	NV	NV
RV[2]	140	200	52	21	210

Notes

1 Risk-Based Value (RBV) based on EPA and TCEQ criteria for residential land-use

2 Reference Value (RV) set at lowest of human health (HH) RBV and ecological (ECO) RBV

3 NA = Compound Not Analyzed

4 Values in bold exceed reference value

5 J = concentration below method quantitation limit. Value should be considered estimate

6 Only VOCs detected in at least one soil sample are included in this table

7 ECO-RBV for toluene is the TCEQ published value (less than EPA value, if published)

8 NV = No value available

Table 4 - Semi-Volatile Organic Compound Concentrations in Soil

August 25, 2009

Sample ID	Sample Depth (ft below grade)	Acenapthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo (a) anthracene (mg/kg)	Benzo (a) pyrene (mg/kg)	Benzo (b) fluoranthene (mg/kg)	Benzo (g, h, i) perylene (mg/kg)	Benzo (k) fluoranthene (mg/kg)
R & H									
R-SO-4	0-0.25	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0
R-SO-5	0-0.25	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3
R-SO-6	0-0.25	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8
R-SO-7	0-0.25	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0
R-SO-8	0-0.25	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4
R-SO-9	0-0.25	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3
R-SO-11	0-0.25	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2
R-SO-12	Not available	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
R-SO-13	0-0.25	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3
R-SO-14	0-0.25	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2
R-SO-16	0-2	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1
R-SO-17	0-2	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7
R-SO-18	0-2	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7
R-SO-19	0-2	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3
R-SO-20	0-2	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8
R-SO-21	0-2	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
R-SO-22	0-0.25	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9
TROPICANA									
T-SO-1	0-2	< 0.4	< 0.4	< 0.4	0.194 J	0.312 J	0.258 J	0.161 J	0.312 J
T-SO-2	0-2	< 0.4	< 0.4	< 0.4	0.222 J	0.401 J	0.344 J	0.233 J	0.356 J
OFFSITE									
O-SO-15	0-0.25	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5
O-SO-23	Not available	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9
O-SO-24	Not available	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2
O-SO-25	Not available	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3
BACKGROUND									
B-SO-1	0-0.25	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1
B-SO-2	0-0.25	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
B-SO-3	0-0.25	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2
HH-RBV[1]		2,970	3,780	17,700	0.62	0.062	0.62	1,780	6.2
ECO-RBV[1]		20	NV	NV	NV	NV	NV	NV	NV
RV[2]		20	3,780	17,700	0.62	0.062	0.62	1,780	6.2

Table 4 - Semi-Volatile Organic Compound Concentrations in Soil

August 25, 2009

Sample ID	Bis (2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) anthracene (mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-butyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
R & H								
R-SO-4	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0
R-SO-5	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3
R-SO-6	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8
R-SO-7	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0
R-SO-8	35.4	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4
R-SO-9	73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3
R-SO-11	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2
R-SO-12	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
R-SO-13	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3
R-SO-14	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2
R-SO-16	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1	< 14.1
R-SO-17	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7
R-SO-18	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7
R-SO-19	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3
R-SO-20	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8
R-SO-21	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
R-SO-22	2.7 J	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9
TROPICANA								
T-SO-1	0.4	< 0.4	0.269 J	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
T-SO-2	0.4	< 0.4	0.289 J	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
OFFSITE								
O-SO-15	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5
O-SO-23	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9
O-SO-24	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2
O-SO-25	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3
BACKGROUND								
B-SO-1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1
B-SO-2	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
B-SO-3	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2
HH-RBV[1]	35	240	62	0.062	1,400	660	4,400	1,300
ECO-RBV[1]	NV	NV	NV	NV	100	200	200	NV
RV[2]	35	240	62	0.062	100	200	200	1,300

Table 4 - Semi-Volatile Organic Compound Concentrations in Soil

Sample ID	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1, 2, 3-cd) pyrene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
R & H					
R-SO-4	< 175.0	< 175.0	< 175.0	< 175.0	< 175.0
R-SO-5	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3
R-SO-6	< 35.8	< 35.8	< 35.8	< 35.8	< 35.8
R-SO-7	< 105.0	< 105.0	< 105.0	< 105.0	< 105.0
R-SO-8	< 35.4	< 35.4	< 35.4	< 35.4	< 35.4
R-SO-9	< 73.3	< 73.3	< 73.3	< 73.3	< 73.3
R-SO-11	< 70.2	< 70.2	< 70.2	< 70.2	< 70.2
R-SO-12	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
R-SO-13	< 9.3	< 9.3	< 9.3	< 9.3	< 9.3
R-SO-14	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2
R-SO-16	< 14.1	< 14.1	< 14.1	< 14.1	14.1
R-SO-17	< 71.7	< 71.7	< 71.7	< 71.7	< 71.7
R-SO-18	< 66.7	< 66.7	< 66.7	< 66.7	< 66.7
R-SO-19	< 14.3	< 14.3	< 14.3	< 14.3	< 14.3
R-SO-20	< 14.8	< 14.8	< 14.8	< 14.8	< 14.8
R-SO-21	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
R-SO-22	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9
TROPICANA					
T-SO-1	0.247 J	< 0.4	0.151 J	< 0.4	0.215 J
T-SO-2	0.278 J	< 0.4	0.218 J	< 0.4	0.244 J
OFFSITE					
O-SO-15	< 14.5	< 14.5	< 14.5	< 14.5	< 14.5
O-SO-23	< 6.9	< 6.9	< 6.9	< 6.9	< 6.9
O-SO-24	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2
O-SO-25	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3
BACKGROUND					
B-SO-1	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1
B-SO-2	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
B-SO-3	< 7.2	< 7.2	< 7.2	< 7.2	< 7.2
HH-RBV[1]	2,300	2,600	0.62	1,710	1,700
ECO-RBV[1]	NV	30	NV	NV	NV
RV[2]	2,300	30	0.62	1,710	1,700

Notes

1 Risk-Based Value (RBV) based on EPA and TCEQ criteria for residential land-use

2 Reference Value (RV) set at lowest of human health (HH) RBV and ecological (ECO) RBV

3 Values in bold exceed reference value.

4 J = concentration below method quantitation limit. Value should be considered estimate

5 All samples were collected on July 9, 1998.

6 ECO-RBVs are TCEQ published value (less than EPA value, if published)

7 NV = No value available

Table 5 - Pesticide Concentrations in Soil

August 25, 2009

Sample ID	Sample Depth (ft below grade)	4, 4' - DDE (mg/kg)	4, 4' - DDT (mg/kg)	alpha-chlordane (mg/kg)	gamma-chlordane (mg/kg)
R & D					
R-SO-4	0-0.25	< 0.088	< 0.088	< 0.044	< 0.044
R-SO-5	0-0.25	< 0.366	< 0.366	< 0.183	< 0.183
R-SO-6	0-0.25	< 0.179	< 0.179	< 0.090	< 0.090
R-SO-7	0-0.25	< 1.050	< 1.050	< 0.526	< 0.526
R-SO-8	0-0.25	< 0.177	< 0.177	< 0.089	< 0.089
R-SO-9	0-0.25	< 0.183	< 0.183	< 0.092	< 0.092
R-SO-11	0-0.25	< 0.351	< 0.351	< 0.175	< 0.175
R-SO-12	Not available	< 0.018	< 0.018	< 0.009	< 0.009
R-SO-13	0-0.25	< 0.094	< 0.094	< 0.047	< 0.047
R-SO-14	0-0.25	< 0.091	< 0.091	< 0.046	< 0.046
R-SO-16	0-2	< 0.035	< 0.035	< 0.018	< 0.018
R-SO-17	0-2	< 0.072	< 0.072	< 0.036	< 0.036
R-SO-18	0-2	< 0.017	< 0.017	< 0.008	< 0.008
R-SO-19	0-2	< 0.072	< 0.072	< 0.036	< 0.036
R-SO-20	0-2	< 0.019	< 0.019	< 0.009	< 0.009
R-SO-21	0-2	< 0.071	< 0.071	< 0.035	< 0.035
R-SO-22	0-0.25	< 0.075	< 0.075	< 0.037	< 0.037
TROPICANA					
T-SO-1	0-2	< 0.004	< 0.004	0.012	0.010
T-SO-2	0-2	< 0.004	< 0.004	0.003	0.00148 J
OFFSITE					
O-SO-15	0-0.25	< 0.036	< 0.036	< 0.018	< 0.018
O-SO-23	Not available	< 0.003	< 0.003	< 0.002	< 0.002
O-SO-24	Not available	< 0.083	< 0.083	< 0.042	< 0.042
O-SO-25	Not available	< 0.067	< 0.067	< 0.033	< 0.033
BACKGROUND					
B-SO-1	0-0.25	< 0.004	< 0.004	0.00072 J	0.003
B-SO-2	0-0.25	< 0.004	< 0.004	< 0.002	< 0.002
B-SO-3	0-0.25	0.030	**0.058**	< 0.002	< 0.002
HH-RBV[1]		1.7	1.7	1.6	1.6
ECO-RBV[1]		NV	0.021[7]	NV	NV
RV[2]		1.7	0.021	1.6	1.6

Notes:

1. Risk-Based Value (RBV) based on EPA and TCEQ criteria for residential land-use.
2. RV = Reference Value set at lowest of human health (HH) RBV and ecological (ECO) RBV
3. Values in bold exceed reference value.
4. J = concentration below method quantitation limit. Value should be considered estimate
5. All samples were collected on July 9, 1998
6. Only pesticides detected in at least one soil sample are included in this table
7. ECO-RBV is an EPA published value (less than TCEQ value, if published)
8. NV= No value available

Table 6 - Metals Concentrations in Groundwater

August 25, 2009

Well ID	Date Sampled	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Zinc (mg/L)
T-MW-01	7/8/98	< 0.05	0.073	0.537	106	10.2	10.9	0.372	1.78	140	< 0.02
T-MW-02	7/8/98	0.064	0.557	0.152	99.2	8.51	10.1	0.744	2.73	307	0.02
T-MW-04	7/8/98	0.098	0.061	0.372	0.01	4.48	8.31	0.513	3.83	162	0.112
T-MW-05	7/8/98	< 0.05	0.111	0.305	101	7.68	12.5	0.607	1.28	132	< 0.02
T-MW-05	7/8/98	< 0.05	0.108	0.297	0.108	7.44	12.2	0.59	1.24	129	< 0.02
RV[1]		2.4	0.01	2	NV[2]	NV	NV	1.10	NV	NV	7.3

Notes:

1. RV = Reference Value based on EPA and TCEQ risk-based criteria for residential 30 acre source area.
2. NV = No value available.
3. Values in bold exceed reference value.

Table 7 - Volatile Organic Compound Concentrations in Groundwater

August 25, 2009

Well ID	Sample Date	Acetone (mg/L)	Benzene (mg/L)	2-Butanone (mg/L)	cis-1, 2-Dichloroethene (mg/L)
R & H TEMPORARY WELLS					
R-ERM-SB-07	3/31/04	0.052	0.65	0.0096 J	< 0.00074
R-ERM-SB-09	3/31/04	< 0.0012	2.2	< 0.0007	0.0062
R-ERM-SB-10	4/2/04	< 0.0012	24	0.0380	0.0052
R-ERM-SB-10	4/2/04	< 0.0012	23	0.030	0.0047 J
R-ERM-SB-11	4/1/04	< 0.0012	2.8	0.047	0.0190
R-ERM-SB-11	4/1/04	< 0.0012	2.8	0.039	0.0170
R-ERM-SB-12	4/1/04	< 0.0012	37	0.038	0.0024 J
TROPICANA WELLS					
T-MW-01	11/20/90	< 5.0	< 0.3	< 5	< 0.3
T-MW-01	7/8/98	< 10	1.97	< 10	< 0.002
T-MW-02	11/20/90	NA	0.95	NA	NA
T-MW-02	7/8/98	< 10	0.782	< 10	< 0.002
T-MW-02	3/31/04	< 0.0012	0.43	< 0.0007	0.0011 J
T-MW-02	3/31/04	< 0.0012	0.37	< 0.0007	0.00099 J
T-MW-03	1/25/91	NA	0.066	NA	NA
T-MW-03	1/29/91	NA	2.6	NA	NA
T-MW-03	9/28/95	Note: LNAPL detected in well, no water sample collected			
T-MW-03	7/9/98	Note: LNAPL detected in well, no water sample collected			
T-MW-03	3/31/04	Note: LNAPL detected in well, no water sample collected			
T-MW-04	1/25/91	NA	55	NA	NA
T-MW-04	1/29/91	NA	0.7	NA	NA
T-MW-04	7/8/98	< 10	0.163	< 10	< 0.002
T-MW-04	3/31/04	< 0.0012	< 0.0007	< 0.0007	< 0.00074
T-MW-05	2/5/91	NA	2	NA	NA
T-MW-05	7/8/98	< 10	0.369	< 10	< 0.002
T-MW-05	7/8/98	< 10	0.408	< 10	< 0.002
T-MW-05	3/31/04	Note: LNAPL detected in well, no water sample collected			
T-MW-06	2/5/91	NA	0.29	NA	NA
T-MW-06	9/28/95	Note: LNAPL detected in well, no water sample collected			
T-MW-06	7/8/98	Note: LNAPL detected in well, no water sample collected			
T-MW-06	3/31/04	Note: LNAPL detected in well, no water sample collected			
OFF-SITE TEMPORARY WELLS					
O-ERM-SB-01	3/30/04	< 0.0012	0.07	< 0.0007	< 0.0016 J
O-ERM-SB-02	3/30/04	0.12	0.006	< 0.0007	< 0.00074
O-ERM-SB-03	3/30/04	< 0.0012	0.00091 J	< 0.0007	< 0.00074
O-ERM-SB-04	3/30/04	< 0.0012	0.00082 J	< 0.0007	0.0096
RV[2]		22	0.005	15.0	0.07

Table 7 - Volatile Organic Compound Concentrations in Groundwater

August 25, 2009

Well ID	Sample Date	1, 1-Dichloroethene (mg/L)	Ethylbenzene (mg/L)	Isopropylbenzene (mg/L)	Tetrachloroethene (mg/L)
R & B TEMPORARY WELLS					
R-ERM-SB-07	3/31/04	< 0.00053	0.0034 J	NA	< 0.00043
R-ERM-SB-09	3/31/04	< 0.00053	0.17	NA	< 0.00043
R-ERM-SB-10	4/2/04	< 0.00053	1.2	NA	< 0.00043
R-ERM-SB-10	4/2/04	< 0.00053	1.5	NA	< 0.00043
R-ERM-SB-11	4/1/04	< 0.00053	0.89	NA	0.00064 J
R-ERM-SB-11	4/1/04	< 0.00053	0.79	NA	0.00065 J
R-ERM-SB-12	4/1/05	< 0.00053	1.7	NA	< 0.00043
TROPICANA WELLS					
T-MW-01	11/20/90	< 0.3	< 0.3	NA	< 0.3
T-MW-01	7/8/98	< 0.002	0.0835	0.0939	< 0.002
T-MW-02	11/20/90	0.002	0.033	NA	NA
T-MW-02	7/8/98	< 0.002	0.0443	0.045	< 0.002
T-MW-02	3/31/04	< 0.00053	0.0072 J	NA	< 0.00043
T-MW-02	3/31/04	< 0.00053	0.0018 J	NA	< 0.00043
T-MW-03	1/25/91	NA	1.6	NA	NA
T-MW-03	1/29/91	NA	0.7	NA	NA
T-MW-03	9/28/95	Note: LNAPL detected in well, no water sample collected			
T-MW-03	7/9/98	Note: LNAPL detected in well, no water sample collected			
T-MW-03	3/31/04	Note: LNAPL detected in well, no water sample collected			
T-MW-04	1/25/91	NA	0.04	NA	NA
T-MW-04	1/29/91	NA	0.05	NA	NA
T-MW-04	7/8/98	< 0.002	< 0.002	0.0026	< 0.002
T-MW-04	3/31/04	< 0.00053	< 0.00077	NA	< 0.00043
T-MW-05	2/5/91	NA	0.02	NA	NA
T-MW-05	7/8/98	< 0.002	< 0.002	0.0108	< 0.002
T-MW-05	7/8/98	< 0.002	< 0.002	0.0123	< 0.002
T-MW-05	3/31/04	Note: LNAPL detected in well, no water sample collected			
T-MW-06	2/5/91	NA	0.14	NA	NA
T-MW-06	9/28/95	Note: LNAPL detected in well, no water sample collected			
T-MW-06	7/8/98	Note: LNAPL detected in well, no water sample collected			
T-MW-06	3/31/04	Note: LNAPL detected in well, no water sample collected			
OFF-SITE TEMPORARY WELLS					
O-ERM-SB-01	3/30/04	< 0.0053	0.0017 J	NA	0.0016 J
O-ERM-SB-02	3/30/04	< 0.0053	0.26	NA	< 0.00043
O-ERM-SB-03	3/30/04	< 0.0053	< 0.00077	NA	< 0.00043
O-ERM-SB-04	3/30/04	0.0011 J	< 0.00077	NA	0.0092
RV		0.007	0.7	2.4	0.005

Table 7 - Volatile Organic Compound Concentrations in Groundwater

August 25, 2009

Well ID	Sample Date	Toulene (mg/L)	Trichloroethene (mg/L)	Vinyl Chloride (mg/L)	Xylenes (mg/L)
R & B TEMPORARY WELLS					
R-ERM-SB-07	3/31/04	0.013	< 0.0007	< 0.00079	0.017
R-ERM-SB-09	3/31/04	0.052	0.00096 J	< 0.00079	0.32
R-ERM-SB-10	4/2/04	24	< 0.0007	< 0.00079	9.1
R-ERM-SB-10	4/2/04	24	< 0.0007	< 0.00079	8.7
R-ERM-SB-11	4/1/04	3.1	0.0013 J	**0.0087**	6.3
R-ERM-SB-11	4/1/04	3.0	0.0013 J	**0.0093**	6.1
R-ERM-SB-12	4/1/05	17	< 0.0007	< 0.00079	14
TROPICANA WELLS					
T-MW-01	11/20/90	< 0.3	< 0.3	< 0.5	< 0.30
T-MW-01	7/8/98	0.017	< 0.002	< 2	0.02
T-MW-02	11/20/90	< 0.005	NA	NA	0.08
T-MW-02	7/8/98	0.0075	< 0.002	< 2	0.02
T-MW-02	3/31/04	0.0039 J	< 0.0007	< 0.00079	0.0035 J
T-MW-02	3/31/04	0.0035 J	< 0.0007	< 0.00079	0.0034 J
T-MW-03	1/25/91	0.25	NA	NA	0.24
T-MW-03	1/29/91	7.3	NA	NA	6.60
T-MW-03	9/28/95	Note: LNAPL detected in well, no water sample collected			
T-MW-03	7/9/98	Note: LNAPL detected in well, no water sample collected			
T-MW-03	3/31/04	Note: LNAPL detected in well, no water sample collected			
T-MW-04	1/25/91	24	NA	NA	36
T-MW-04	1/29/91	0.06	NA	NA	0.23
T-MW-04	7/8/98	0.0028	< 0.002	< 2	0.003
T-MW-04	3/31/04	< 0.00069	< 0.0007	< 0.00079	< 0.0018
T-MW-05	2/5/91	0.008	NA	NA	0.03
T-MW-05	7/8/98	0.0021	< 0.002	< 2	0.003
T-MW-05	7/8/98	0.0043	< 0.002	< 2	0.003
T-MW-05	3/31/04	Note: LNAPL detected in well, no water sample collected			
T-MW-06	2/5/91	2	NA	NA	1.60
T-MW-06	9/28/95	Note: LNAPL detected in well, no water sample collected			
T-MW-06	7/8/98	Note: LNAPL detected in well, no water sample collected			
T-MW-06	3/31/04	Note: LNAPL detected in well, no water sample collected			
OFF-SITE TEMPORARY WELLS					
O-ERM-SB-01	3/30/04	< 0.00069	0.003 J	< 0.00079	< 0.0018
O-ERM-SB-02	3/30/04	0.0008 J	< 0.0007	< 0.00079	0.095
O-ERM-SB-03	3/30/04	0.001 J	< 0.0007	< 0.00079	< 0.0018
O-ERM-SB-04	3/30/04	0.00086 J	**0.043**	< 0.00079	< 0.0018
RV		1	0.005	0.002	10

Notes

1 NA = compound not analyzed

2 RV = Reference Value based on EPA and TCEQ risk-based criteria for residential 30 acre source area

3 Values in bold exceed reference value

4 Only VOCs detected in at least one groundwater sample are included in this table

Table 8 - Semi-Volatile Organic Compound Concentrations in Groundwater

August 25, 2009

Well ID	Date Sampled	2, 4-Dimethylphenol (mg/L)	2-Methylnaphthalene (mg/L)	Napthalene (mg/L)	Phenol (mg/L)
T-MW-01	8-Jul-98	0.005 J	0.0937	0.108	0.005 J
T-MW-02	8-Jul-98	< 0.010	0.0121	0.011	< 0.010
T-MW-04	8-Jul-98	< 0.010	< 0.0100	< 0.010	< 0.010
T-MW-05	8-Jul-98	< 0.012	0.0984	< 0.0118	0.005 J
T-MW-05	8-Jul-98	< 0.010	0.0857	< 0.010	0.009 J
RV[1]		0.49	0.098	0.49	7.3

Notes:

1. RV = Reference Value based on EPA and TCEQ risk-based criteria for residential 30 acre source area.
2. Values in bold exceed reference value.
3. Only SVOCs detected in at least one groundwater sample are included in this table.

Well ID	Sampling Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	Trichloro-ethylene (mg/L)	Tetrachloro-ethylene (mg/L)	1,2-Dichloroethene (mg/L)
SS052MW098	5/10/2001	<0.001	<0.001	<0.001	<0.001	0.037	0.0048	0.01
SS052MW098	4/22/2002	<0.001	<0.001	<0.001	<0.001	0.0283	0.00511	0.00746
SS052MW098	4/14/2003	<0.001	0.00024 J	<0.001	<0.001	0.0391	0.00301	0.0168
SS052MW098	4/16/2004	<0.001	0.00057 J	<0.001	<0.001	0.025	0.00211	0.0115
SS052MW098	4/13/2005	<0.001	0.00009 J	<0.001	<0.001	0.0243	0.00203	0.0091
SS052MW098	5/23/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0189	0.0048	0.005
SS052MW098	4/18/2007	na	na	na	na	0.014	0.0031 J	0.0045
SS052MW122	5/11/2001	<0.001	<0.001	<0.001	<0.001	0.016	0.028	0.066
SS052MW122	4/22/2002	<0.001	<0.001	<0.001	<0.001	0.00658	0.0209	0.0245
SS052MW122	4/15/2003	<0.001	<0.001	<0.001	<0.001	0.00433	0.0167	0.0134
SS052MW122	4/19/2004	<0.001	0.00039 J	<0.001	<0.001	0.00164	0.00441	0.00483
SS052MW122	4/13/2005	<0.001	<0.001	<0.001	<0.001	0.00265	0.0102	0.00868
SS052MW122	6/12/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0022	0.0048	0.0046
SS052MW122	6/1/2007	na	na	na	na	0.0026	0.0031	0.0037
SS052MW132	5/10/2001	<0.001	<0.001	<0.001	<0.001	0.0058	0.0047	0.0024
SS052MW132	4/26/2002	<0.001	<0.001	<0.001	<0.001	0.0335	0.00528	0.00437
SS052MW132	4/14/2003	<0.001	0.00046 J	<0.001	<0.001	0.00894	0.00867	0.00325
SS052MW132	4/16/2004	0.00005 J	0.00077 J	<0.001	<0.001	0.00501	0.0072	0.0021
SS052MW132	4/13/2005	<0.001	0.00009 J	<0.001	<0.001	0.00845	0.0108	0.00297
SS052MW132	6/12/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0045	0.008	0.0019
SS052MW132	4/18/2007	na	na	na	na	0.0031	0.0047 J	0.0011
SS052MW190	5/15/2001	<0.001	0.00033 J	<0.001	<0.001	0.026	0.034	0.1
SS052MW190	4/11/2002	0.00011 J	<0.001	<0.001	<0.001	0.0193	0.0257	0.0931
SS052MW190	4/3/2003	0.00015 J	<0.001	<0.001	<0.001	0.0144	0.0156	0.0664
SS052MW190	4/19/2004	0.00006 J	<0.001	<0.001	<0.001	0.0106	0.012	0.0564
SS052MW190	4/6/2005	<0.001	<0.001	<0.001	<0.001	0.00346	0.0194	0.0452
SS052MW190	5/25/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0085	0.0054	0.0385
SS052MW190	4/16/2007	na	na	na	na	0.0086	0.007	0.031
SS052MW200	5/15/2001	<0.001	0.00042 J	<0.001	<0.001	0.001	<0.001	0.0012
SS052MW200	4/23/2002	<0.001	<0.001	<0.001	<0.001	0.0002 J	0.00024 J	0.00062 J
SS052MW200	4/4/2003	<0.001	0.00049 J	<0.001	<0.001	0.00598	0.00222	0.00245
SS052MW200	4/9/2004	0.00007 J	0.00044 J	<0.001	<0.001	0.0023	0.00118	0.00383
SS052MW200	4/6/2005	<0.001	<0.001	<0.001	<0.001	0.00648	0.00341	0.00651
SS052MW200	6/13/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0084	0.0078	0.0076
SS052MW200	4/17/2007	na	na	na	na	0.0037	0.0042	0.0013
SS052MW210	5/15/2001	<0.001	0.00048 J	<0.001	<0.001	0.013	0.005	0.0052
SS052MW210	4/23/2002	0.00029 J	<0.001	<0.001	<0.001	0.0169	0.0071	0.00689
SS052MW210	4/7/2003	<0.001	<0.001	<0.001	<0.001	0.0212	0.00986	0.00509
SS052MW210	4/7/2004	0.00011 J	0.00054 J	<0.001	<0.001	0.0104	0.00444	0.00349
SS052MW210	4/6/2005	<0.001	<0.001	<0.001	<0.001	0.0159	0.00699	0.00423
SS052MW210	6/12/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0184	0.0077	0.0043
SS052MW210	5/3/2007	na	na	na	na	0.015	0.0055	0.004
SS052MW213	5/15/2001	<0.001	0.00062 J	<0.001	<0.001	<0.001	<0.001	<0.001
SS052MW213	4/11/2002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SS052MW213	4/4/2003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SS052MW213	4/19/2004	0.00008 J	0.00049 J	<0.001	<0.001	<0.001	0.00005 J	<0.001
SS052MW213	4/6/2005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SS052MW213	6/13/2006	<0.00015	<0.00016	<0.00035	<0.00037	<0.00027	<0.0005	<0.0002
SS052MW213	5/3/2007	na	na	na	na	<0.00013	<0.00018	<0.00034

Well ID	Sampling Date	Benzene (mg/L)	Tolene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	Trichloro-ethylene (mg/L)	Tetrachloro-ethylene (mg/L)	1,2-Dichloroethene (mg/L)
SS052MW270	5/14/2001	<0.001	<0.001	<0.001	<0.001	0.08	0.0068	0.02
SS052MW270	4/9/2002	0.00028 J	<0.001	<0.001	<0.001	0.0362	0.00327	0.0137
SS052MW270	4/7/2003	<0.001	0.00024 J	<0.001	<0.001	0.031	0.00453	0.00807
SS052MW270	4/8/2004	<0.001	0.00037 J	<0.001	<0.001	0.0301	0.00392	0.00912
SS052MW270	4/8/2005	<0.001	<0.001	<0.001	<0.001	0.029	0.00359	0.00933
SS052MW270	5/25/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0346	0.0029	0.0105
SS052MW270	5/4/2007	na	na	na	na	0.018	0.0028	0.0064
SS052MW272	5/14/2001	<0.001	<0.001	<0.001	0.001	0.032	0.011	0.0074
SS052MW272	4/9/2002	<0.001	<0.001	<0.001	<0.001	0.0277	0.00877	0.00628
SS052MW272	4/7/2003	<0.001	0.00025 J	<0.001	<0.001	0.0295	0.0109	0.00641
SS052MW272	4/8/2004	<0.001	0.00025 J	<0.001	<0.001	0.0284	0.0109	0.00644
SS052MW272	4/1/2005	<0.001	<0.001	<0.001	<0.001	0.0288	0.0106	0.00652
SS052MW272	5/16/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0361	0.0099	0.0074
SS052MW272	4/16/2007	na	na	na	na	0.026	0.0075	0.0058
SS052MW273	5/15/2001	<0.001	0.00029 J	<0.001	0.001	<0.001	0.0012	0.002
SS052MW273	4/9/2002	0.00013 J	<0.001	<0.001	<0.001	0.00736	0.00212	0.00141
SS052MW273	4/7/2003	<0.001	0.00033 J	<0.001	<0.001	0.0111	0.00244	0.00239
SS052MW273	4/7/2004	0.00017 J	0.00044 J	<0.001	<0.001	0.00821	0.00229	0.00185
SS052MW273	4/6/2005	0.00008 J	<0.001	<0.001	<0.001	0.0108	0.00368	0.00237
SS052MW273	5/15/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0136	0.0035	0.0032
SS052MW273	4/16/2007	na	na	na	na	0.0075	0.0018	0.0021
SS052MW275	6/6/2001	<0.001	<0.001	<0.001	0.001	0.012	0.0092	0.0058
SS052MW275	4/9/2002	<0.001	<0.001	<0.001	<0.001	0.00831	0.00871	<0.001
SS052MW275	4/7/2003	<0.001	0.00028 J	<0.001	<0.001	0.00772	0.00762	0.00382
SS052MW275	4/7/2004	<0.001	<0.001	<0.001	<0.001	0.0083	0.00649	0.00338
SS052MW275	4/6/2005	<0.001	<0.001	<0.001	<0.001	0.0102	0.00656	0.00341
SS052MW275	6/1/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.014	0.0053	0.0036
SS052MW275	5/4/2007	na	na	na	na	0.0093	0.0042	0.003
SS052MW592	6/6/2001	na	na	na	na	na	na	na
SS052MW592	7/11/2002	<0.001	<0.001	<0.001	<0.001	0.00755	0.00201	0.00195
SS052MW592	4/7/2003	<0.001	<0.001	<0.001	<0.001	0.00887	0.00191	0.00319
SS052MW592	4/8/2004	0.00008 J	0.00038 J	<0.001	<0.001	0.00603	0.00102	0.00265
SS052MW592	4/1/2005	<0.001	<0.001	<0.001	<0.001	0.0244	0.0047	0.0103
SS052MW592	5/30/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.021	0.0061	0.0078
SS052MW592	4/18/2007	na	na	na	na	0.0087	0.004 J	0.0031
SS052MW594	6/6/2001	na	na	na	na	na	na	na
SS052MW594	7/11/2002	<0.001	<0.001	<0.001	<0.001	0.00446	0.00084 J	0.0007 J
SS052MW594	4/7/2003	<0.001	<0.001	<0.001	<0.001	0.0191	0.00845	0.00522
SS052MW594	4/9/2004	0.00011 J	<0.001	<0.001	<0.001	0.00996	0.0035	0.00334
SS052MW594	4/1/2005	<0.001	<0.001	<0.001	<0.001	0.0187	0.00799	0.00665
SS052MW594	5/30/2006	<0.00015	<0.00016	<0.00035	<0.00037	0.0116	0.0102	0.0035
SS052MW594	5/8/2007	na	na	na	na	0.0046	0.0048	0.0016 J

Notes

1 J = analyte detected at reported concentration, quantitation is an estimate

2 na = not analyzed

3 See Figure 5 for well locations

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1]
Soil (all samples)	Volatile Organics	EPA 8260
	1,1,1,2-Tetrachloroethane	
	1,1,1-Trichloroethane	
	1,1,2,2-Tetrachloroethane	
	1,1,2-Trichloroethane	
	1,1-Dichloroethane	
	1,1-Dichloroethene	
	1,1-Dichloropropene	
	1,2,3-Trichloropropane	
	1,2,4-Trichlorobenzene	
	1,2,4-Trimethylbenzene	
	1,2-Dibromo-3-chloropropane	
	1,2-Dibromoethane	
	1,2-Dichlorobenzene	
	1,2-Dichloroethane	
	1,2-Dichloropropane	
	1,3,5-Trimethylbenzene	
	1,3-Dichlorobenzene	
	1,3-Dichloropropane	
	1,4-Dichlorobenzene	
	2,2-Dichloropropane	
	2-Butanone	
	2-Chlorotoluene	
	2-Hexanone	
	4-Chlorotoluene	
	4-Methyl-2-pentanone	
	Acetone	
	Benzene	
	Bromobenzene	
	Bromodichloromethane	
	Bromoform	
	Bromomethane	
	Carbon disulfide	
	Carbon tetrachloride	
	Chlorobenzene	
	Chloroethane	
	Chloroform	
	Chloromethane	
	cis-1,2-Dichloroethene	
	cis-1,3-Dichloropropene	
	Dibromochloromethane	
	Dibromomethane	
	Dichlorodifluoromethane	
	Ethylbenzene	
	Hexachlorobutadiene	
	Isopropylbenzene (Cumene)	
	Iodomethane	
	Methylene chloride	
	Naphthalene	
	n-Butylbenzene	
	n-Propylbenzene	
	p-Isopropyltoluene	
	sec-Butylbenzene	
	Styrene	
	tert-Butyl methyl ether (MTBE)	
	tert-Butylbenzene	
	Tetrachloroethene	
	Toluene	
	trans-1,2-Dichloroethene	
	trans-1,3-Dichloropropene	
	Trichloroethene	
	Trichlorofluoromethane	
	Vinyl chloride	
	Xylenes (total)	

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1]
Soil (all samples)	Semi-Volatile Organics	EPA 8270
	2,4,5-Trichlorophenol	
	2,4,6-Trichlorophenol	
	2,4-Dichlorophenol	
	2,4-Dimethylphenol	
	2,4-Dinitrophenol	
	2,4-Dinitrotoluene	
	2,6-Dinitrotoluene	
	2-Chloronaphthalene	
	2-Chlorophenol	
	2-Methylnaphthalene	
	2-Nitroaniline	
	2-Nitrophenol	
	3,3'-Dichlorobenzidine	
	3-Nitroaniline	
	4,6-Dinitro-2-methylphenol	
	4-Bromophenyl phenyl ether	
	4-Chloro-3-methylphenol	
	4-Chloroaniline	
	4-Chlorophenyl phenyl ether	
	4-Methylphenol	
	4-Nitroaniline	
	4-Nitrophenol	
	Acenaphthene	
	Acenaphthylene	
	Aniline	
	Anthracene	
	Benzo(a)anthracene	
	Benzo(a)pyrene	
	Benzo(b)fluoranthene	
	Benzo(g,h,i)perylene	
	Benzo(k)fluoranthene	
	Benzyl alcohol	
	Bis(2-Chloroethoxy)methane	
	Bis(2-Chloroethyl)ether	
	Bis(2-Chloroisopropyl)ether	
	Bis(2-Ethylhexyl)phthalate	
	Butyl benzyl phthalate	
	Chrysene	
	Dibenz(a,h)anthracene	
	Dibenzofuran	
	Diethyl phthalate	
	Dimethyl phthalate	
	Di-n-butyl phthalate	
	Di-n-octyl phthalate	
	Fluoranthene	
	Fluorene	
	Hexachlorobenzene	
	Hexachlorocyclopentadiene	
	Hexachloroethane	
	Indeno(1,2,3-cd)pyrene	
	Isophorone	
	Nitrobenzene	
	n-Nitrosodi-n-propylamine	
	Pentachlorophenol	
	Phenanthrene	
	Phenol	
	Pyrene	

Table 10 - Summary of Analytical Methods

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1]
Soil (all samples)	Metals	EPA 6010 or 6020
	Aluminum	
	Arsenic	
	Barium	
	Chromium	
	Cobalt	
	Copper	
	Lead	
	Manganese	
	Nickel	
	Selenium	
	Thallium	
	Vanadium	
	Zinc	
	Mercury	EPA 7471A
	Total Petroleum Hydrocarbons	TX 1005/1006[2]
	Moisture Content	Std Methods 2540G[3] or ASTM D2216[3]
Soil (one sample per general soil type)	Total Organic Carbon	EPA 415.1[4]/9060
	Soil Bulk Density	ASTM D7937[5]
	Moisture Content	ASTM D2216[5]
	Swell or Settlement Potential	ASTM D4546[5]
	One-Dimensional Consolidation	ASTM D2435[5]
	Compaction Characteristics	ASTM D698[5]
Soil (three samples per general soil type)	Grain-size distribution (for particles greater than No. 200 sieve)	ASTM D422[5]
	Atterburg Limits (fine-grained soils only)	ASTM D4318[5]

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1)]
Groundwater	Volatile Organics	EPA 8260
	1,1,1,2-Tetrachloroethane	
	1,1,1-Trichloroethane	
	1,1,2,2-Tetrachloroethane	
	1,1,2-Trichloroethane	
	1,1-Dichloroethane	
	1,1-Dichloroethene	
	1,1-Dichloropropene	
	1,2,3-Trichloroprepane	
	1,2,4-Trichlorobenzene	
	1,2,4-Trimethylbenzene	
	1,2-Dibromo-3-chloropropane	
	1,2-Dibromoethane	
	1,2-Dichlorobenzene	
	1,2-Dichloroethane	
	1,2-Dichloropropane	
	1,3,5-Trimethylbenzene	
	1,3-Dichlorobenzene	
	1,3-Dichloropropane	
	1,4-Dichlorobenzene	
	2,2-Dichloropropane	
	2-Butanone	
	2-Chlorotoluene	
	2-Hexanone	
	4-Chlorotoluene	
	4-Methyl-2-pentanone	
	Acetone	
	Benzene	
	Bromobenzene	
	Bromodichloromethane	
	Bromoform	
	Bromomethane	
	Carbon disulfide	
	Carbon tetrachloride	
	Chlorobenzene	
	Chloroethane	
	Chloroform	
	Chloromethane	
	cis-1,2-Dichloroethene	
	cis-1,3-Dichloropropene	
	Dibromochloromethane	
	Dibromomethane	
	Dichlorodifluoromethane	
	Ethylbenzene	
	Hexachlorobutadiene	
	Isopropylbenzene (Cumene)	
	Iodomethane	
	Methylene chloride	
	Naphthalene	
	n-Butylbenzene	
	n-Propylbenzene	
	p-Isopropyltoluene	
	sec-Butylbenzene	
	Styrene	
	tert-Butyl methyl ether (MTBE)	
	tert-Butylbenzene	
	Tetrachloroethene	
	Toluene	
	trans-1,2-Dichloroethene	
	trans-1,3-Dichloropropene	
	Trichloroethene	
	Trichlorofluoromethane	
	Vinyl chloride	
	Xylenes (total)	

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1)]
Groundwater	Semi-Volatile Organics	EPA 8270
	2,4,5-Trichlorophenol	
	2,4,6-Trichlorophenol	
	2,4-Dichlorophenol	
	2,4-Dimethylphenol	
	2,4-Dinitrophenol	
	2,4-Dinitrotoluene	
	2,6-Dinitrotoluene	
	2-Chloronaphthalene	
	2-Chlorophenol	
	2-Methylnaphthalene	
	2-Nitroaniline	
	2-Nitrophenol	
	3,3'-Dichlorobenzidine	
	3-Nitroaniline	
	4,6-Dinitro-2-methylphenol	
	4-Bromophenyl phenyl ether	
	4-Chloro-3-methylphenol	
	4-Chloroaniline	
	4-Chlorophenyl phenyl ether	
	4-Methylphenol	
	4-Nitroaniline	
	4-Nitrophenol	
	Acenaphthene	
	Acenaphthylene	
	Aniline	
	Anthracene	
	Benzo(a)anthracene	
	Benzo(a)pyrene	
	Benzo(b)fluoranthene	
	Benzo(g,h,i)perylene	
	Benzo(k)fluoranthene	
	Benzyl alcohol	
	Bis(2-Chloroethoxy)methane	
	Bis(2-Chloroethyl)ether	
	Bis(2-Chloroisopropyl)ether	
	Bis(2-Ethylhexyl)phthalate	
	Butyl benzyl phthalate	
	Chrysene	
	Dibenz(a,h)anthracene	
	Dibenzofuran	
	Diethyl phthalate	
	Dimethyl phthalate	
	Di-n-butyl phthalate	
	Di-n-octyl phthalate	
	Fluoranthene	
	Fluorene	
	Hexachlorobenzene	
	Hexachlorocyclopentadiene	
	Hexachloroethane	
	Indeno(1,2,3-cd)pyrene	
	Isophorone	
	Nitrobenzene	
	n-Nitrosodi-n-propylamine	
	Pentachlorophenol	
	Phenanthrene	
	Phenol	
	Pyrene	

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1]
Groundwater	Metals	EPA 6010 or 6020
	Aluminum	
	Arsenic	
	Barium	
	Chromium	
	Cobalt	
	Copper	
	Lead	
	Manganese	
	Nickel	
	Selenium	
	Thallium	
	Vanadium	
	Zinc	
	Mercury	EPA 7471A
	Total Petroleum Hydrocarbons	TX 1005/1006[2]

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1]
LNAPL (two representative samples)	Volatile Organics	EPA 8260
	1,1,1,2-Tetrachloroethane	
	1,1,1-Trichloroethane	
	1,1,2,2-Tetrachloroethane	
	1,1,2-Trichloroethane	
	1,1-Dichloroethane	
	1,1-Dichloroethene	
	1,1-Dichloropropene	
	1,2,3-Trichloropropane	
	1,2,4-Trichlorobenzene	
	1,2,4-Trimethylbenzene	
	1,2-Dibromo-3-chloropropane	
	1,2-Dibromoethane	
	1,2-Dichlorobenzene	
	1,2-Dichloroethane	
	1,2-Dichloropropane	
	1,3,5-Trimethylbenzene	
	1,3-Dichlorobenzene	
	1,3-Dichloropropane	
	1,4-Dichlorobenzene	
	2,2-Dichloropropane	
	2-Butanone	
	2-Chlorotoluene	
	2-Hexanone	
	4-Chlorotoluene	
	4-Methyl-2-pentanone	
	Acetone	
	Benzene	
	Bromobenzene	
	Bromodichloromethane	
	Bromoform	
	Bromomethane	
	Carbon disulfide	
	Carbon tetrachloride	
	Chlorobenzene	
	Chloroethane	
	Chloroform	
	Chloromethane	
	cis-1,2-Dichloroethene	
	cis-1,3-Dichloropropene	
	Dibromochloromethane	
	Dibromomethane	
	Dichlorodifluoromethane	
	Ethylbenzene	
	Hexachlorobutadiene	
	Isopropylbenzene (Cumene)	
	Iodomethane	
	Methylene chloride	
	Naphthalene	
	n-Butylbenzene	
	n-Propylbenzene	
	p-Isopropyltoluene	
	sec-Butylbenzene	
	Styrene	
	tert-Butyl methyl ether (MTBE)	
	tert-Butylbenzene	
	Tetrachloroethene	
	Toluene	
	trans-1,2-Dichloroethene	
	trans-1,3-Dichloropropene	
	Trichloroethene	
	Trichlorofluoromethane	
	Vinyl chloride	
	Xylenes (total)	

Table 10 - Summary of Analytical Methods

SAMPLE TYPE	SAMPLE ANALYSES	ANALYTICAL METHOD[1]
LNAPL (two representative samples)	Total Petroleum Hydrocarbons	TX 1006[2]
	Dynamic Viscosity	ASTM D445[5]
	Fluid Density	ASTM D1481[5]
	Air/LNAPL Interfacial Tension	ASTM D971[5]
	LNAPL/Water Interfacial Tension	ASTM D971[5]

Notes:

1. Unless indicated otherwise, analytical methods are from EPA SW-846 "Test Methods for Evaluating Solid Waste."
2. Texas Commission on Environmental Quality Method
3. Method from "Standard Methods for Examination of Water and Wastewater."
4. Method from EPA 600/4-79-020 "Methods for Chemical Analysis of Water and Wastes."
5. Method from ASTM Book of Standards Volume 4.08

FIGURES

EXPLANATION

- Site Boundary Fence
- Soil Boring/Temporary Well
- Groundwater Monitoring Well
- Composite Soil Sample
- Composite Soil Area
- Grab Soil Sample

Note: All locations are approximate

N

Approx. Scale in Feet

0 60 120

Source:
http://imageserver.sanantonio.gov aerial photograph, 8/19/00. Sample locations from Removal Site Evaluation Reports (E&E, August 1998) and ERM Site Investigation Report (September 2004)

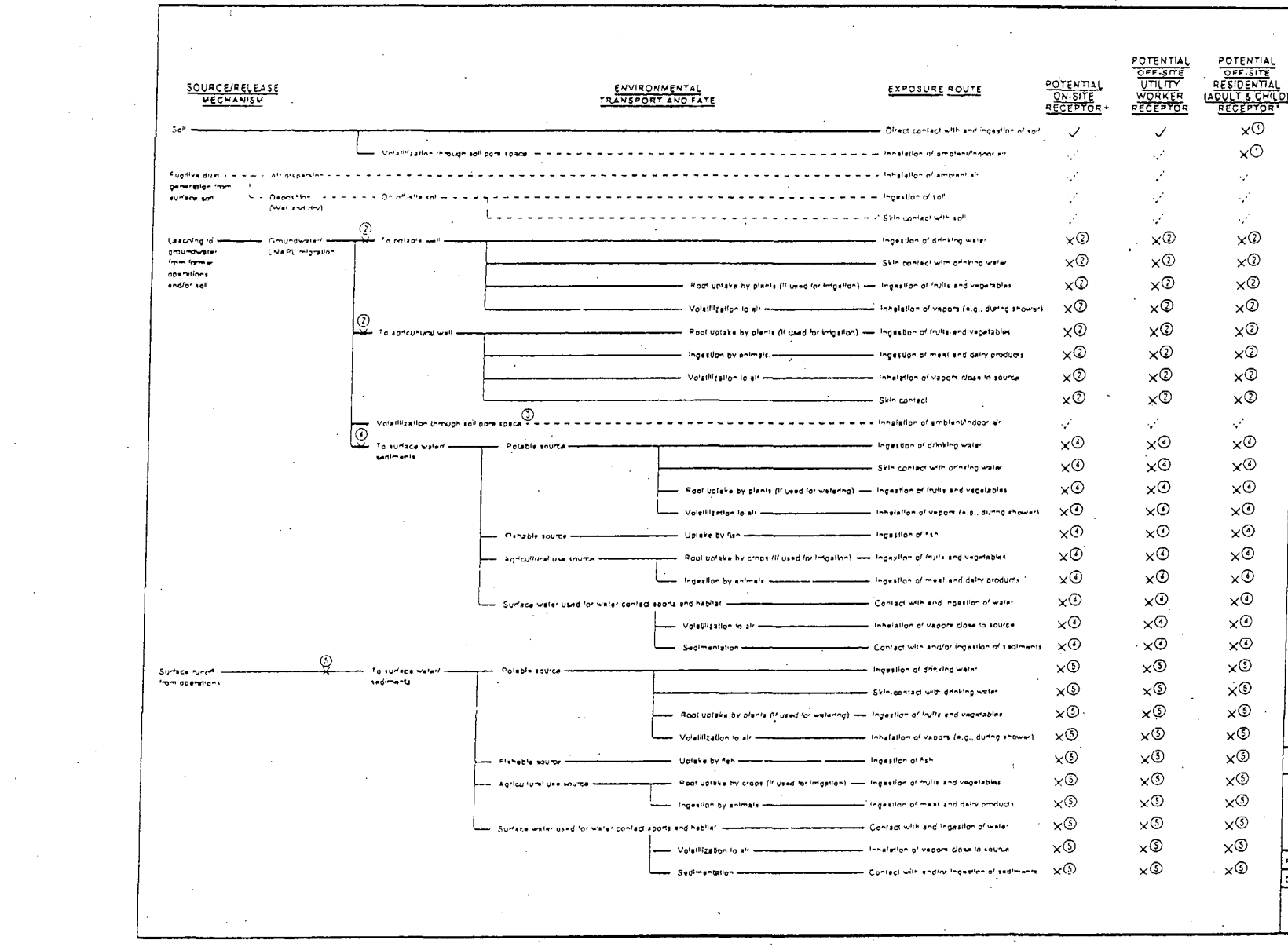
R&H OIL/TROPICANA ENERGY SITE

Figure 1

PREVIOUS INVESTIGATION LOCATIONS

PROJECT: 1329	BY: ZGK	REVISIONS
DATE: JULY, 2008	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



LEGEND:

- ——X—— Pathway is Incomplete
- - - - Pathway is Potentially Complete
- ——— Pathway is Complete, Potentially Significant

NOTES:

① Pathway applies to on-site receptors only.

② TNRCC Site Screening Report (TNRCC, 2000) indicates that no water wells from the shallow aquifer are being used for drinking or irrigation.

③ In the Public Health Assessment for the R&H Oil Company & Tropicana Energy Company Site (ATSDR, 2003), ATSDR noted that this pathway was evaluated in a petitioned public health assessment for the nearby East Kelly Air Force Base site which concluded that soil gas migration from contaminated groundwater to indoor air of nearby residents posed no apparent public health hazard.

④ Groundwater discharge to surface water is not occurring at or near the Site.

⑤ The surface water pathway is incomplete because there is no overland flow segment or flood potential for the Site and the nearest perennial surface waters are located approximately 3 miles southwest of the Site.

+ Receptor includes maintenance, and commercial/ industrial workers, and trespassers.

✓ Indicates potential receptor for complete migration pathway.

⋰ Potentially complete pathway (i.e., pathway for which additional data are needed).

* Receptor includes a pregnant female.

X Incomplete pathway.

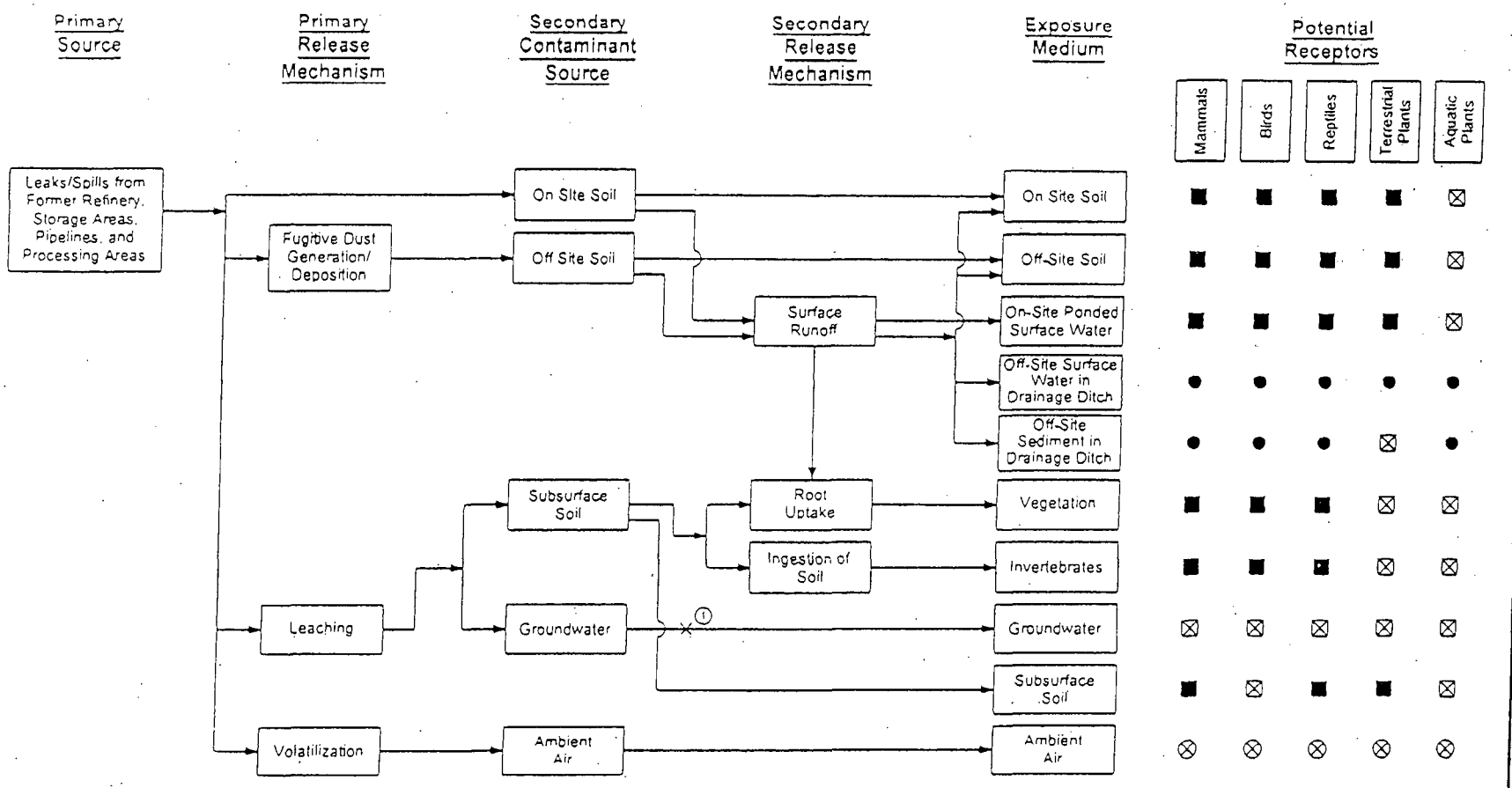
R&H OIL/TROPICANA ENERGY SITE

Figure 2

HUMAN HEALTH CONCEPTUAL SITE MODEL

PROJECT: 1329	BY: ZGK	REVISIONS
DATE: JULY, 2008	CHECKED: KHY	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



LEGEND

- ■ Pathway is complete
- ⊠ Pathway is incomplete
- ⊗ Pathway is potentially complete, not evaluated
- ● Pathway is potentially complete, to be evaluated

NOTES:

(1) The depth to groundwater precludes exposure to most, if not all, receptors.

R&H OIL/TROPICANA ENERGY SITE

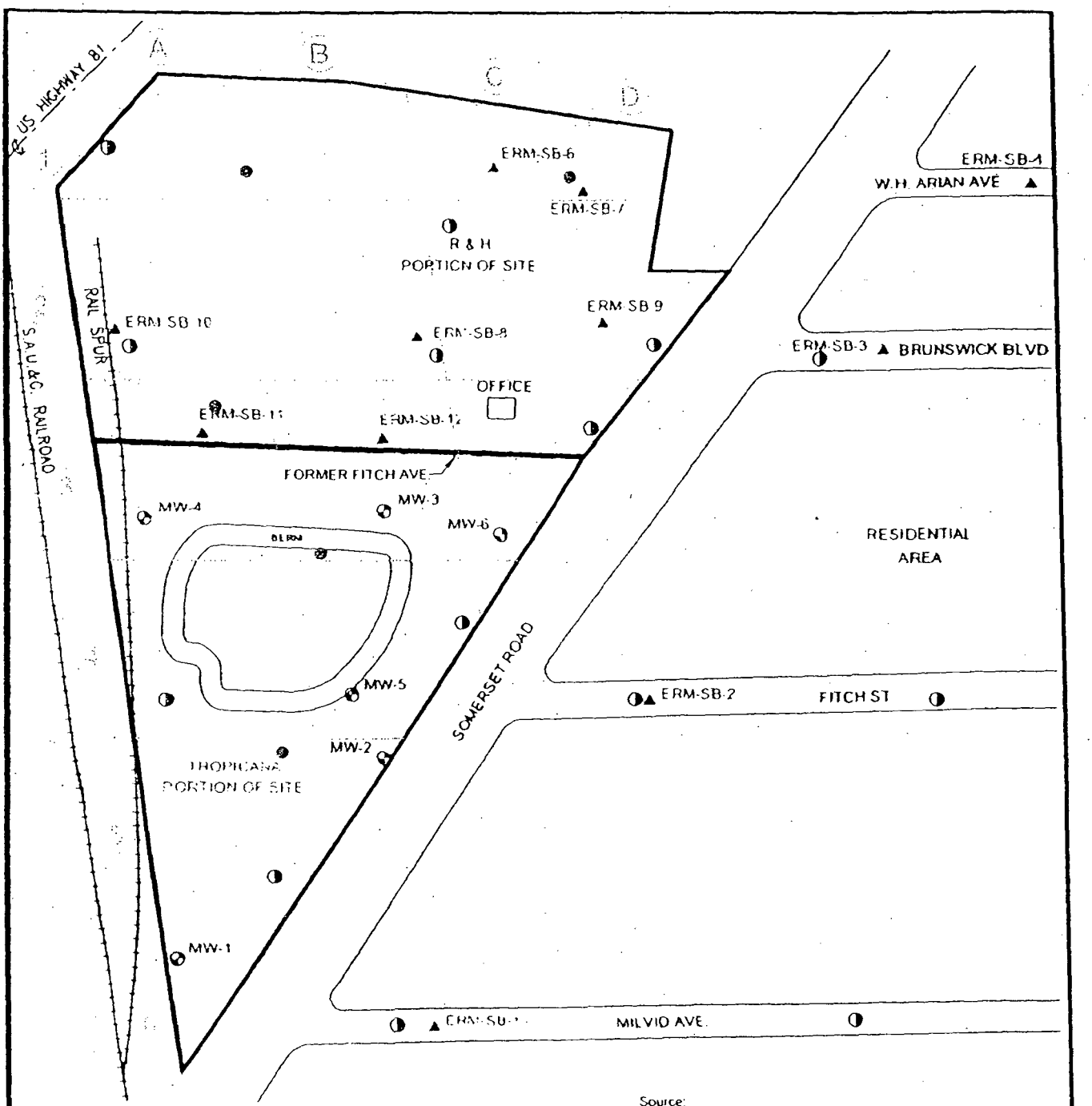
Figure 3

ECOLOGICAL CONCEPTUAL SITE MODEL

PROJECT: 1329	BY: ZGK	REVISIONS
DATE: JULY, 2008	CHECKED: KHT	

PASTOR, BEHLING & WHEELER, LLC

CONSULTING ENGINEERS AND SCIENTISTS



Source:
Base map from Engineering Management Support, Inc. Site Map dated September 2004.

EXPLANATION

- ▲ Previous Soil Boring/Temporary Well Location
- Existing Groundwater Monitoring Well Location
- RI/FS Soil Boring/Groundwater Monitoring Well Location
- RI/FS Soil Boring/LNAPL Monitoring Well Location

Note:
All locations are approximate. RI/FS locations subject to modification based on field conditions.

N

Scale in Feet
0 60 120

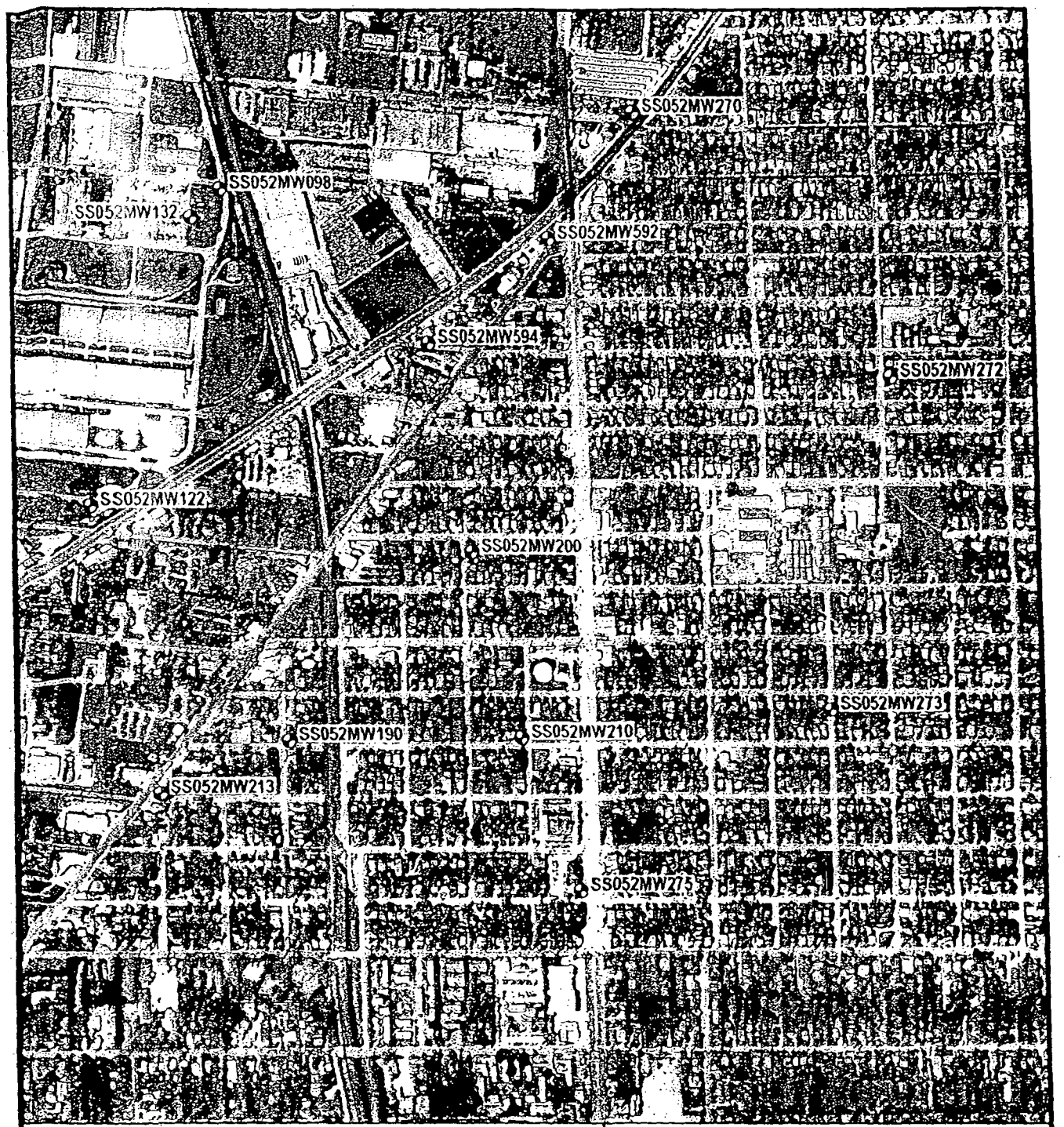
R&H OIL/TROPICANA ENERGY SITE

Figure 4

RI/FS SAMPLE LOCATIONS

PROJECT 1329	BY ZGK	REVISIONS
DATE AUG. 2009	CHECKED EFP	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

Approx. Site Boundary

Groundwater Monitoring Well

Note: All locations are approximate

N

Approx. Scale in Feet

0 400 800

Source:
http://imageserver.sanantonio.gov aerial photograph, 8/19/03. Sample locations from Removal Site Evaluation Reports (E&E, August 1998) and ERM Site Investigation Report (September 2004).

R&H OIL/TROPICANA ENERGY SITE

Figure 5

SELECTED FORMER EAST KELLY AIR FORCE BASE GROUNDWATER MONITORING WELLS

PROJECT 1329	BY ZGK	REVISIONS
DATE AUG. 2009	CHECKED EFP	

PASTOR, BEHLING & WHEELER, LLC

CONSULTING ENGINEERS AND SCIENTISTS